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The Efficiency of the Blowlamp for the Destruction of Coccidial Oöcysts in Poultry-houses

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There is a widespread belief among poultry farmers that the blowlamp is the most reliable of all means for the disinfection of poultry-houses; few efforts have been made, however, to ascertain just how efficient it really is and the only published report that we have been able to find—that of Stafseth and Camargo (1935)—showed its efficiency for bacterial disinfection to be not nearly so high as had generally been supposed, flaming for 15 seconds having been demonstrated by them to be insufficient time for the complete disinfection of an eight-inch square of a poultry-house concrete floor which had previously been smeared with droppings artificially infected with *B. coli* and *S. pullorum*.

This result is significant from a practical point of view and we considered that the work was worth repeating. Furthermore, since the flame-resisting power of coccidial oöcysts might be different from that of *B. coli* and *S. pullorum* it seemed desirable to carry out some experiments on coccidia along the lines of those carried out by Stafseth and Camargo on the bacteria.

The method of the American workers consisted of smearing thin films of bacteria-infested faeces on to cleaned areas of the concrete floor of a poultry-house, flaming the areas when they had become dry, and afterwards rubbing the areas with sterile swabs which were placed in nutrient broth, as a test for the completion of disinfection.

One of the difficulties which was foreseen in the application of this kind of technique to the flaming of coccidia was the recovery of the oöcysts from the floor for culturing and microscopical examination after subjection to the heat; we, therefore, decided first to make comparisons between some bacterial organism and coccidial oöcysts, thinking that when once their relative resistances to the heat of the blowlamp had been ascertained, we might be able to use the bacteria as an index to disinfection from coccidia, with which it might be impracticable to work in some of the tests that we proposed to carry out.

Chromobacterium prodigiosum was chosen as the test organism, being easy to grow and easy to recognise, and we proceeded to test the relative resistances of coccidial oöcysts and *C. prodigiosum* on mica squares of three-quarter inch diameter and on small blocks of wood with sides of the same measurements, some with a rough and some with a smooth surface; also on similar small areas of asbestos, zinc sheeting, and galvanised iron, one face only being covered with the test organism and the rest being sterile.

COMPARISON OF THE FLAME-RESISTING POWERS OF COCCIDIAL OÖCYSTS AND *Chromobacterium prodigiosum*

The method of carrying out the test was to allow the oöcysts or bacteria to dry on to the surface of the test material and then, immediately, to hold it in the blowlamp flame so that the maximum heat was directed on to the test surface, for the required period. The three-quarter inch square of material was then either placed in sterile culture medium, when the bacteria were being used, or, where coccidia were used, was covered with a very shallow layer of 2 per cent. potassium bichromate solution and kept on moist filter paper in a closed petri dish until there had been ample opportunity for sporulation to take place, *i.e.*, for at least three days.

Unflamed controls were treated in the same way as a check on growth or sporulation.

The results obtained are shown in Table I (*overleaf*).

TABLE I

FLAMING OF COCCIDIAL OOCYSTS AND *Chromobacterium prodigiosum* ON THREE-QUARTER INCH SQUARES OF VARIOUS MATERIALS

Test Organism.	Nature of surface, etc., on which tested.	Viability, as indicated by sporulation or growth after subjection to the blow-lamp flame for a varying number of seconds. Showing the number of positive and number of negative results for each period.															
		½		1		2		3		4		5		6		7		Control.	
		+	—	+	—	+	—	+	—	+	—	+	—	+	—	+	—	+	—
Coccidial oöcysts	Mica, usual surface, dry*		12		12		12		12		12		12		12		12	12	
	Smooth wood, dry		12		12		12											12	
	Rough wood, dry	3	9		12		12											12	
	Asbestos, as used in construction of poultry houses, dry	2	10		12		12											12	
	Asbestos, damp*	8	4		12		12											12	
	Zinc, usual surface, dry		12		12		12											12	
Chromo-bacterium prodigiosum	Mica, usual surface, dry	2	10		12		12		12		12		12		12		12	12	
	Smooth wood, dry	2	10		12		12											12	
	Rough wood, dry	2	10	2	10		12											12	
	Asbestos, dry		12		12		12		12									12	
	Asbestos, damp	2	10	1	11		12		12									12	
	Zinc, usual surface, dry		12		12		12		12									12	

*Where the word " dry " appears the surface was not flamed until it appeared to be dry ; flaming was carried out as soon as it looked dry, however, and dryness was not allowed to act unnecessarily long upon the test organism because of the lethal effect of this factor. Special controls were run on one or two occasions to ascertain whether the drying alone was killing the oöcysts, but on each occasion they were found to have remained viable.

The word " damp " refers to an obviously damp surface but not to one that is covered with a thin film of liquid.

THE FLAMING OF LARGER AREAS.

Tests were next carried out on the flaming of twelve-inch squares of various substances. Oöcysts or bacteria were placed on the sterile surface of the test square, and as soon as the surface had become dry the laboratory poultry-keeper, who is expert in the use of the blow-lamp, was asked to flame the surface in an attempt to sterilise the whole of it within the given period. Oöcysts were afterwards recovered by washing the surface with a little sterile water which was subsequently spun in the centrifuge and cultured in 2 per cent. potassium bichromate. *C. prodigiosum* was recovered by rubbing the surface with a wet sterile swab which was afterwards placed in nutrient broth.

Each of these tests was carried out in duplicate, but as in every instance the second result confirmed the first, they are only shown as one result in the following Table II.

TABLE II

FLAMING OF COCCIDIAL OÖCYSTS AND *Chromobacterium prodigiosum* ON TWELVE-INCH SQUARES OF VARIOUS MATERIALS.

Test Organism.	Nature of surface on which tested.	Viability, as indicated by sporulation or growth, after subjection to the blowlamp flame for varying number of seconds.				
		5	10	20	30	40
Coccidial oöcysts	Smooth wood, dry	+	—	—		
	Rough wood, dry	+	—	—		
	Asbestos, dry	+	—	—		•
Chromobacterium prodigiosum	Smooth wood, dry	+	+	—	—	
	Rough wood, dry	+	+	+	—	
	Asbestos, dry	+	+	+	—	
	Smooth wood, damp	+	+	+	—	
	Rough wood, damp	+	+	+	+	—

THE EFFICIENCY OF DISINFECTION BY FLAMING A THIN FILM OF FAECES.

The test organisms were mixed with sterilised chicken's faeces. The mixture was then smeared over sterile twelve-inch squares of the several test materials. The greater part of the faeces mixture was then scraped off with the edge of a glass slide so that only a very thin film remained over the whole surface, such as might be left behind after the thorough scraping of a poultry-house floor. The film was then allowed to dry for 15 minutes or so until all evidence of wetness had disappeared when the poultry-man was again asked to carry out the flaming as best he knew how. The faeces were then scraped from the surface and placed in a 2 per cent. solution of potassium bichromate, or in nutrient broth, the oöcysts subsequently being collected for examination by centrifugal flotation.

The results obtained are shown in Table III.

A similar series of tests was carried out on oöcysts and on bacteria in a damp film of faeces, the results being set down in Table IV.

TABLE III

FLAMING OF COCCIDIAL OÖCYSTS AND *Chromobacterium prodigiosum* IN A DRY THIN FILM OF FAECES ON TWELVE-INCH SQUARES OF VARIOUS MATERIALS.

Test Organism.	Nature of surface, etc., on which tested.	Viability, as indicated by sporulation or growth after subjection to to the blowlamp flame for varying numbers of seconds.							
		5	10	20	30	40	50	60	70
Coccidial oöcysts	Smooth wood	+	—	—					
	Rough wood	+	+	—					
	Asbestos	+	—	—					
	Zinc	+	—	—					
Chromobacterium prodigiosum	Smooth wood					—	—	—	—
	Rough wood					+	+	+	+
	Asbestos					—	—	—	—
	Zinc					+	+	—	—

TABLE IV

FLAMING OF COCCIDIAL OÖCYSTS AND *Chromobacterium prodigiosum* IN A DAMP FILM OF FAECES ON TWELVE-INCH SQUARES OF VARIOUS MATERIALS.

Test Organism.	Nature of surface, etc., on which tested.	Viability as indicated by sporulation or growth after subjection to blowlamp flame for varying numbers of seconds.														
		30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
Coccidial oöcysts	Smooth wood	+	+	+	+	+	+	+	+								
	Rough wood	+	+	+	+	+	+	+	+								
	Asbestos	+	+	+	+	+	+	+	+								
	Zinc	+	+	+	+	+	+	+	+								
Chromobacterium prodigiosum	Smooth wood									—	—	—	—	—	—	—	—
	Rough wood									+	+	+	+	+	—	—	—
	Asbestos									+	+	+	+	—	—	—	—

DISCUSSION

The observations of Stafseth and Camargo on the low efficiency of the blowlamp as a means of disinfection are of considerable importance in view of the great faith which the average poultry-keeper places in it. The series of observations here reported support those made by the two American workers and suggest that the efficiency of the blowlamp may be even lower than was shown by their results. Whereas they found it to be necessary to flame an eight-inch square of faeces-smeared concrete for 15 seconds to kill all the bacteria, our observations, using pieces of material one foot square, show that even in the absence of a thin film of faeces 20 seconds is not sufficient when the surface is rough; where there is a thin film of faeces 70 seconds may not be enough to destroy all infection, and 100 seconds is not enough on any kind of surface that is definitely damp.

One of the chief difficulties in repeating these observations with coccidia was that of collecting the oöcysts and examining them under the microscope for sporulation, a procedure which is very inefficient indeed as compared with the

cultural method of demonstrating the presence of living bacteria.

The preliminary comparisons of the heat-resisting powers of oöcysts and *Chromobacterium* cannot be regarded as accurate in that it was not possible, by the method used, to time the flaming to half a second. In every observation, however, both bacteria and coccidia were found to have been killed by one second's exposure, but on one occasion coccidia survived the flaming for half a second and *Chromobacterium* did not, and on another the reverse was the case.

This suggests that the resistance of the two test organisms to blowlamp flaming is somewhere about the same, and if that is so the differences shown in the later observations summarised in Tables II, III and IV, must have had reference to the difficulties in recovering the viable oöcysts after treatment and not to the greater powers of resistance of the bacteria.

It seems probable, therefore, that the true effect of the blowlamp in the destruction of oöcysts is more nearly reflected by the results obtained with *C. prodigiosum* than with the actual coccidial oöcysts themselves and it is concluded that for complete coccidial disinfection even of a clean surface it is necessary to spend more than ten seconds per square foot on a smooth wood surface and more than 20 seconds per square foot on a rough one; that surfaces covered with a thin film of faeces require between 40 and 70 seconds per square foot and even more than 70 seconds on a rough wood surface; and that surfaces, of any of the kinds tested, covered with a thin damp film of faeces are not disinfected after 100 seconds.

At the very best, therefore, it would be necessary to spend over two hours to disinfect the interior of a poultry-house only 20 feet long and twelve feet wide and at the worst it would take more than 16 hours, even when the surface is dry.

It must be concluded, therefore, that the efficiency of the blowlamp as a disinfecting agent for large areas is very low.

Summary

1. The resistance of coccidial oöcysts to the blowlamp flame was found to be approximately the same as that of *Chromobacterium prodigiosum*. On account of the greater ease and certainty with which the presence of living bacteria could be determined—by cultural methods—this organism was used as an index of the efficiency of disinfection from coccidia by the blowlamp.

2. One second's exposure to the blowlamp flame was found to be sufficient to kill both *C. prodigiosum* and coccidial oöcysts but approximately half a second on rough surfaces sometimes failed to kill both of these organisms.

3. It was found to be necessary to spend more than 20 seconds in flaming a square foot of clean rough board in order to kill all *C. prodigiosum* that had been painted on to it.

4. *C. prodigiosum* spread in a very thin film of faeces on to a square foot of rough board survived 70 seconds flaming.

5. It is necessary to spend more than 100 seconds in flaming a square foot of smooth wood, rough wood, zinc, or asbestos, if damp, in order to kill all *C. prodigiosum* present.

6. The disinfection of the interior of a poultry-house only 20 feet long and 12 feet wide by the blowlamp would therefore take from two to sixteen hours to complete and it must be concluded that the blowlamp is a very inefficient means of sterilising large surfaces.

It is thought probable that these results also apply to coccidial oöcysts.

Reference

Stafseth, H. J., and Camargo, F. (1935.) On the disinfection of poultry houses by means of fire guns. *Jl. Amer. Vet. Med. Ass.* **86**. 162-166.

WARBLE FLY CONTROL

The obligation imposed upon farmers under the Warble Fly (Dressing of Cattle) Order of 1936 to apply treatment to all cattle visibly affected with the maggot of the warble fly ceased to operate at the end of June. As in the past, owners of cattle have been required to deal with all cases of infestation since the middle of March, and alternative methods of removing the maggots have been open to them. During this year's compulsory dressing period the question was raised in the House of Commons as to whether it might not be advisable to call for returns of the protective measures taken by farmers, and Sir Reginald Dorman-Smith replied: "The suggestion that farmers should be required to make a periodical return of dressing cattle infested with the warble fly maggot will be considered together with other proposals for the amendment of the Warble Fly (Dressing of Cattle) Order, after the close of the current dressing season, which ends on June 30th."

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ARMY VETERINARY SERVICE

War Office—London Gazette—Territorial Army

June 30th.—Captain W. P. Moss, M.C., to be Major (June 16th).

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Swine Fever Orders came into force towards the end of June prohibiting the movement of pigs except by licence in practically the whole of Gloucestershire and Somerset. The outbreak is one of the worst in the West for some years.

BIOGRAPHICAL NOTICE

The Appointment of Dr. F. C. Minett as Director of the Imperial Institute of Veterinary Research, Muktesar, India

Surprising as may seem to some readers at home Dr. Minett's decision to relinquish the important position of Professor of Pathology and Director of the Research Institute of the Royal Veterinary College, London, to accept the post in India which is designated in the title of this notice, we believe that none will deny the wisdom of the appointment or fail to admire Dr. Minett's courage and enterprise in seizing the unique and immense opportunities for furthering the cause of veterinary science within the British Empire that are offered to him at Muktesar. He proceeds to his new task at a time in life—he is now 48 years of age—when most servants of the Government of India are not far off retirement. Yet we are sanguine that, granted good fortune, Dr. Minett will add further to his own reputation in the field of work he has chosen and leave India immeasurably better fitted to undertake the advancement of veterinary science of her own accord, through her own trained young men who are fortunate enough to come under his guidance and follow his example.

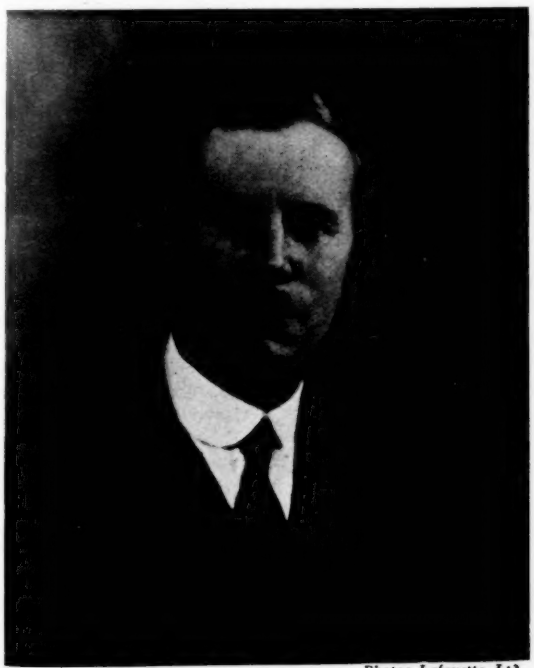

Photo: Lafayette, Ltd.

Dr. Minett was educated at King Edward's School, Bath (1899-1907). He entered the Royal Veterinary College, London, in 1907, and was one of the few students at that time who underwent the dual course for the R.C.V.S. Diploma and the London University Degree in Veterinary Science. He was a conscientious, hardworking and thrifty student. After qualification he was soon appointed Junior Assistant, under Sir John M'Fadyean, in the Department of Pathology at his College, the remuneration in those days for such a post only amounting to £100 a year, but the training and discipline for the young worker were beyond price. In 1913, he was appointed to a Ministry of Agriculture Research Scholarship and towards the end of the year proceeded to Paris to study at the Pasteur Institute and under Professor Vallée at the Alfort Veterinary School. His return was necessitated by the outbreak of war, in August, 1914, and he joined the R.A.V.C. as an officer in the Special Reserve, proceeding immediately to France with the British Expeditionary Force. Not long afterwards he returned to serve at the Royal Army Veterinary School, Aldershot, where his main duties were concerned with the preparation of mallein. In addition, he carried out some conspicuous research work, his papers on the corynebacteria of ulcerative cellulitis in horses published just after the War being outstanding. He had, meanwhile joined the regular commissioned ranks of the Corps and was appointed Instructor at the School. He proceeded on a period of service to Egypt from 1921 to 1924. In the latter year he resigned his Army commission and obtained an appointment under the Foot-and-Mouth Disease Research Committee which had just then been formed. Working at the Ministry of Agriculture's Veterinary Laboratory at Weybridge, which had then only recently been opened, in close collaboration with the late Sir Stewart Stockman, Dr. Minett quickly established himself as a first-class research worker, as the scope and variety of his researches, duly published in the Committee's Reports, amply testify. In 1925 he was appointed to the Permanent Research Staff of the Ministry of Agriculture. With the changes consequent upon Sir John M'Fadyean's retirement from the Royal Veterinary College, London, in 1927, it was no surprise when Dr. Minett was

appointed to the vacant post of Director of the new Research Institute in Animal Pathology at that College. When later the posts were amalgamated in 1933 he became Professor of Pathology as well as Director of the Research Institute. He was awarded the D.Sc. in Veterinary Science of the University of London in 1927. The outstanding work during his tenure of this post has been the studies undertaken by him and his colleagues (A. W. Stableforth and S. J. Edwards and later E. J. Pullinger) upon bovine mastitis and related subjects. The department under his charge has recently grown considerably and has been a prolific source of supply of original contributions to veterinary research. He has served on committees of the Agricultural Research Council dealing with Fowl Paralysis and Allied Diseases (Chairman), Johne's Disease (Secretary), contagious abortion, and bovine mastitis, and has been on the Executive Committee of the Imperial Cancer Research Fund since 1932, and on the Foot-and-Mouth Disease Research Committee since 1937. Dr. Minett has been a "Member" of the Lister Institute since 1937 and is a Member or Fellow of various societies such as the Royal Society of Medicine (having been Joint Secretary of the Comparative Medicine Section), Pathological Society, Veterinary Research Club (President 1937-38) and a Fellow of the Central Veterinary Society since 1925. He has been a member of the Executive Council and Court of Governors of the Royal Veterinary College since 1936. He has contributed a valuable annual review of the progress of veterinary science in the publication of the Royal Agricultural Society of England entitled "The Farmer's Guide to Agricultural Research," since 1930.

No record, however short, of Dr. Minett's services would be complete in this journal without reference to the valuable work he has done for the N.V.M.A. In token of his achievements he was last year awarded the Dalrymple-Champneys Cup and Medal. He served on the Editorial Committee of this journal from 1927 to 1931 and worked hard to enhance its prestige, being a frequent leader-writer and writer of notices upon books and reports and scrutineer of original contributions. He was a useful member of the Special Committee which sat over a long period "to survey all matters relating to the office of the N.V.M.A. and to the *Veterinary Record*." He has contributed a number of papers to the N.V.M.A. Congresses and meetings of Divisions.

Dr. Minett has eschewed nevertheless the path of advancement by political activities and he owes his prestige strictly in virtue of his efficiency at his own craft, that of veterinary research worker. In this pursuit he has rendered immeasurable service in the difficult post-War period, when suitable men for higher appointment in the new research institutes were scarce, in advancing veterinary science to a worthy place among the biological sciences by his own effort and by enlisting the support of younger men whose reputations are now made largely by his example and discipline. In brief, his sterling characteristics, as is known to those who know him best, are his honesty, his industry and his simple and steadfast loyalty towards those whom he has served and who have served him.

Mrs. Minett was a former colleague in the army department at Aldershot during the War, having held the position of Deputy-Administrator of the Q.M.A.A.C. Both she and her husband were decorated at the same time by the late King George V in 1920 with the M.B.E. for their services.

It is now the settled policy of this journal to dwell only exceptionally upon the characteristics of living members, but in view of the distant and in many ways to them strange field in which Dr. and Mrs. Minett at this stage in their lives have decided to cast their careers we make no apology for the present exception, testifying, as we intend it shall do, that it concerns an earnest worker and his wife who have deserved well of us and assuring them that we shall be always solicitous of their welfare and happiness in India. We wish them well.

Riding Stables to be Inspected: Registration Dropped

When the Riding Establishments (Registration and Inspection) Bill came before a House of Commons Standing Committee recently, Lieut.-Commander Tufnell, promoter of the Bill, asked for the deletion of the clause which gives power to compel registration.

He abandoned the clause owing to criticisms; to the complicated machinery that would be necessary; and to the impossibility of exempting certain types of establishments that it was not intended should be included except under certain conditions.

The promoters (he said) accepted the Home Office suggestion that attention should be paid to the clause enabling local authorities to authorise qualified veterinary surgeons to enter and inspect the establishments.

The clause was deleted without a division, and the Bill was ordered to be reported to the House.

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There have been more than a dozen outbreaks of foot-and-mouth disease in the West Riding since the first case at a farm near Keighley at the beginning of June.

The Veterinary Record

July 8th, 1939.

Developments in Veterinary Research in India

TWO events reported in this journal call for short editorial comment upon the above topic. First, the appointment of Dr. Minett to the Directorship of the Imperial Institute of Veterinary Research, Muktesar, which was briefly announced in our issue of June 17th last, has merited a tribute in the form of a short record and appreciation of his services in the cause of the advancement of veterinary research in this country. Secondly, the report which is reproduced of the speech made by the present Viceroy of India, the Marquess of Linlithgow, at the opening of the new buildings to accommodate two new services, namely those of Animal Nutrition and Poultry Research, at the Izatnagar substation of the above Institute marks a development which cannot but be regarded as most auspicious throughout the whole veterinary world. We would commend our readers to a careful perusal of this enlightened speech. As can be testified by those who have had first-hand experience of veterinary affairs in India, it gives a clear and succinct exposition of the enormous field of work that awaits exploration by the skilled veterinary investigator for the lasting good of the teeming millions in that country who are directly dependent, as perhaps in few other countries, upon their livestock for their livelihood. Furthermore the context of the speech displays a remarkable perception of the scope and evolution of modern veterinary science, to cope with which, as has been stressed recently by our Association, veterinary education generally stands in need of drastic re-orientation and re-adaptation. Within a few years in our own veterinary history, as in that of the medical profession, and largely as the outcome of knowledge derived from well-ordered research and a more and more intelligent appreciation of a large body of the educated public of the utility of subsidising research from public funds, "the progress of attention" in the words of Lord Linlithgow, "has been from the cure of disease to prevention of disease and then to the establishment of health." This simple statement conveys almost precisely the meaning which we would attach to the changes we regard now as essential in our system of training. As Chairman of the Royal Commission on Agriculture in India, 1926-1928, Lord Linlithgow had had exceptional experience in studying minutely the peculiar problems of the Indian cultivator. The chapters in the report of that Commission dealing with Animal Husbandry and Diseases of Livestock and their Control (in which we can discern also the perception and sound judgment of the present Vice-Chairman of the Development Commission and Chairman of the Agricultural Research Council, Sir Thomas Middleton) embody what may be regarded as the first reasoned comprehensive enquiry into and exposition of the veterinary problem in India undertaken by Government. In truth, the just display contained in the report of the vast problem represented by the livestock economy of India and the measures that were recommended to allay its steady and grave deterioration must have served, it is hoped, to avert the impending tragedy, caused by long official neglect, of the entire disappearance of the veterinary services in India.

Founded in 1891, and manned at the beginning by officers seconded from the Army Veterinary Department, the Indian Civil Veterinary Department for some years promised to become one of the most promising fields of recruitment for the best British veterinary graduates. A fine record of service, in the establishment of the several veterinary colleges for the training of Indian graduates, and the organisation of the provincial veterinary departments for the treatment and control of animal disease stands to their credit. In 1890, an Imperial Bacteriologist was appointed for the investigation of animal disease, and in 1893 his laboratory was moved to Muktesar, a remote spot in the Himalayan foothills, where favourable opportunities were presented for investigation of the great cattle scourge of India, rinderpest. In that year, the value of anti-rinderpest serum became known from South African observations, and for several years the attention of the Muktesar laboratory, and of its small plains substation near Bareilly, became focused mainly on the preparation and issue of this product. Gradually, however, this aspect of its activities tended to obscure its original functions as a research institute, so that when the Indian Retrenchment Committee in 1922 made its enquiries it took the view that the laboratory ought to be conducted as a factory, on a self-supporting basis. The

history of the Institute, indeed, illustrates the dangers of pursuing large-scale quasi-commercial production at institutes primarily designed as research institutes, for with the overweening expansion of this aspect the idea is readily impressed on the mind of officialdom that directorship should be vested in a man with administrative experience rather than scientific ability, and the fate of the institute as a research centre is doomed. Meanwhile, in India, a fatal development took place when in 1912 the post of Inspector-General of the Civil Veterinary Department was abolished. This event, the result of which was that the veterinary department became the "Cinderella" of the services and its control vested in the Agricultural Department, is strongly commented upon in the Lovat Report. Not until after steps had been taken in part to implement the recommendations of the Linlithgow Report, and a Council of Agricultural Research constituted in close association with the Government of India, and a veterinary authority—Colonel (now Sir Arthur) Olver—appointed to the post of Animal Husbandry Expert on this Council, in 1931, can it be said that the veterinary services in general and veterinary research in particular could find the means to assert themselves and flourish in India. It is anxiously hoped that the Government of that great territory will always take the sane course of appointing the most competent veterinary authority available to that exalted post. In that way only will be safeguarded the careers of young Indian veterinary graduates, whom their British colleagues ardently wish to see occupying in increasing numbers, as laid down in the Linlithgow Report, honourable and remunerative positions in the service of their country. To a large extent, the problem of rinderpest seems, as the result of the researches at Muktesar from 1922 to 1929, to have been resolved in a way which could have hardly been foreseen by the signatories of the Linlithgow Report, when they devoted to it their main attention as a transcendent veterinary problem. New and diverse problems await solution, and one of the most pressing recommendations of the Report remaining to be fulfilled is the establishment of a Central Veterinary College, which it is believed is likely to be built at the Izatnagar substation. "Conditions in India," says the Linlithgow Report, with much reason, "call for initiative, judgment, tact and high professional skill in a far greater degree than they do in countries in which rigorous police measures are possible." Again, we cannot fail, in appreciating the significance of Dr. Minett's appointment, to recall the judgment of the Linlithgow Report, written in 1928, upon the type of man suitable for this appointment: "It has been proposed that the direction of the Muktesar Institute should be entrusted to a senior veterinary officer whose work would be of an administrative character, and that research should be conducted under his supervision by a specially qualified staff. We are opposed to this proposal. For work at Muktesar, a very special training is necessary, the work is scientific rather than professional, and a veterinary or medical qualification, in itself, affords no guarantee that an officer has the training required to undertake, much less to direct, research. . . . The Director of the Institute, in our view, must control all its activities and we consider that he should, in future, as at present (*i.e.*, as in 1928) be selected for his scientific qualifications and on the ground that he is, in the words in which the appointment was last advertised, a first-class veterinary pathologist." These words might well apply with equal force to veterinary research institutes in general. Recruitment of British graduates to the Indian Civil Veterinary Department ceased, with the provincialisation of the department, in 1923. To guide the destinies of a research institute, of the magnitude of the Muktesar Institute, with the enormous tasks confronting it, requiring for their elucidation the services of large numbers of as yet inexperienced Indian graduates, we can think of no one who by virtue of his achievements, as original worker and organiser of research, has more fully earned the title to appointment than has our colleague Dr. Minett, if such title is contained, as we honestly believe it must be contained, in the terms specified for recruitment of candidates to this post in the Linlithgow Report. We wish, on behalf of the N.V.M.A., to thank him for his services to our body and for the standing he has given by his own labours and skill in certain fields to veterinary research in the scientific world. We wish him godspeed, good fortune, and safe return after a period of fruitful and distinguished service in his new and large field of enterprise.

There have been over 30 cases of grass sickness in the Arbroath district this season and also over 30 cases in the Montrose area.

ANNOTATION

British Standard Specification for Veterinary Cod Liver Oil

Attention has frequently been drawn in the columns of this journal to the importance of using only cod liver oils of guaranteed quality for animal feeding as well as for purely veterinary purposes. It is an undoubted fact that many cod liver oils hitherto sold for animal administration contained admixtures of other fish liver, vegetable or mineral oils which rendered them quite unsuitable for the purposes for which they were intended. It is equally true that there is still a quantity of "genuine" cod liver oil (*i.e.*, oil derived from livers of the cod family) on the market which has been produced by such inferior methods as to render it a possible source of danger when fed to livestock. These facts have been recognised for a considerable time both by important sections of the producing industry and by the veterinary profession but by no means always appreciated by the stockfeeder.

It has not, however, up to the present been possible to lay down any very definite standards by which the quality of cod liver oil intended for animal feeding could be judged. For purely therapeutic purposes in veterinary medicine it has been customary to use oil of the British Pharmacopoeia standards, but the cost of such oil generally precludes its routine use as a prophylactic or as a feeding stuff for animal purposes.

At the request of a number of *bona fide* producers, the British Standards Institute set up a committee in 1936, comprising representatives of the producers, the stockfeeding industry and the veterinary profession,* to inquire into the possibility of preparing standards of purity and vitamin potency for veterinary cod liver oil. The committee were unanimous on the necessity for such standards and they were, therefore, asked to draw up a specification which would safeguard the interests of purchasers and which at the same time would be acceptable to the producers.

The British Standards Institute has just published the specifications adopted. (*British Standard Specification for Veterinary Cod Liver Oil. Publication No.* 839, 1939, *obtainable from the British Standards Institution,* 28, *Victoria Street, London, price* 2*s. net, post free* 2*s.* 2*d.*)

*The veterinary members of this Committee were Mr. N. J. Scorgie, Royal Veterinary College and Dr. W. R. Wooldridge, London School of Hygiene and Tropical Medicine.

Whilst the specification will do much to ensure the quality of cod liver oil sold for animal feeding, the Institution point out that the specification "does not purport to include all the necessary provisions of a contract." Further, "the specification does not apply to materials which are intended for medicinal use and are included in the B.P." In addition to the specification, the publication also includes details of the methods by which the various chemical and biological tests shall be carried out.

The following abstract of the specification likely to be of interest to the veterinary profession is published with the permission of the British Standards Institution.

Description.—"For the purposes of this Specification Veterinary Cod Liver Oil shall be the product obtained from the fresh, iced or otherwise suitably preserved livers of the Cod, *Gadus morrhua* Linn, and other species of *Gadus*.

The oil when kept for 24 hours at a temperature of 16° C. shall be a clear yellow liquid and shall be free from any foreign matter. The odour shall be slightly fishy but not rancid, and the taste shall be bland and slightly fishy."

Iodine Value.—"The iodine value of the oil shall be not lower than 150 nor higher than 178."

Saponification Value.—"The saponification value of the oil shall be not lower than 180 nor higher than 190."

Acidity.—"The acidity expressed as oleic acid shall not exceed 1 per cent. unless otherwise declared, and in no case shall it exceed 3 per cent."

Unsaponifiable Matter.—"The unsaponifiable matter of the oil shall not exceed 1·5 per cent. unless otherwise agreed between Purchaser and Vendor, and in no case shall it exceed 1·7 per cent."

Vitamin Potency.—"The vitamin potency of the oil shall be not less than 500 units of vitamin A per gramme, 50 units of vitamin D per gramme. All declarations of vitamins A and D potencies shall be made in International units per gramme and the oil tested for its vitamin potencies."

Blue Value.—"If the oil is submitted to the antimony trichloride test, the blue value shall not be lower than 6.

The blue value of Veterinary Cod Liver Oil is not to be taken as a measure of the vitamin A content but as an approximation thereto only. If a discrepancy arises between the vitamin A values suggested by this method and by the biological method, the value determined by the biological method shall be accepted."

Explanation and Comments

Definition. — Great importance should be attached to the restriction to *Gadus* fishes, since practically no other genus of fish furnishes liver oil which is comparable in all its characters with the oil derived from this genus. At virtually all the large producing centres in Britain the cod (*G. morrhua*) predominates in the catch, amounting to as much as 80 per cent. The other *Gadus* fishes which figure to some

extent in the production are haddock (*G. aeglefinus*) and saithe (*G. virens*). The oils from all these three fishes are very similar in their general character. So far as vitamin values are concerned, taking the cod as of average value, haddock liver oil is generally lower in vitamin content while saithe liver oil is distinctly higher.

Colour, smell and taste are senses which every normal individual has at his disposal and can be used with great advantage in estimating the quality of an oil. Oils which are dark in colour and are unpalatable to the taste or smell should be avoided.

Iodine Value.—The limits of iodine value are reasonable. Iodine value can be of some use from an analytical point of view; taken in conjunction with other constants it gives an approximation as to whether the oil is of reasonable purity and quality. If oil is damaged, for example, by oxidation or polymerisation, the iodine value would tend to fall.

Saponification Value.—The relatively high saponification value for cod liver oil is of some diagnostic value, especially when taken in conjunction with the iodine value, the amount of unsaponifiable matter and the general character of the oil. Most of the common adulterants, *e.g.*, dog-fish, herring, shark and cat-fish oils, etc., have lower iodine values and lower saponification values than cod liver oil.

Unsaponifiable Matter.—The proportion of unsaponifiable matter is perhaps the most valuable of the easily ascertained constants of cod liver oil. It has been shown that liver oil from the *Gadus* fishes averages approximately 1·09 per cent. unsaponifiable matter (Harris, 1938, Chemistry and Industry, **57**. 508) and the figure of 1·5 per cent. is therefore not unreasonable in order to cover unavoidable mixtures of small proportions of other livers. The figure of 1·5 per cent. unsaponifiable matter is, in fact, accepted generally both in medical and veterinary science, though it is of interest to note that in the U.S.A. the more stringent unit of 1·3 per cent. has been accepted.

The figure of 1·7 per cent. unsaponifiable matter is, we feel, too high as it allows the possible admixture in unduly high proportions of such oils as dogfish and shark where the unsaponifiable matter may vary from 5 per cent. to 50 per cent. These oils it is true contain considerable amounts of vitamin A but have been shown to be low in vitamin D.

Acidity.—The free acidity of cod liver oil indicates the care which has been taken in the preparation of the oil. High free acidity is therefore indicative of a damaged oil, and though it may not of itself be harmful it indicates the probable presence in the oil of decomposition substances which may be. The writer is of the opinion, therefore, that oils with a greater free acidity than one per cent. are possibly dangerous for animals, and should, if possible, be avoided.

Blue Value.—The limit of 6 blue value is reasonable and should include practically all pure cod liver oils.

Vitamin Values.—The specification lays down that the biological method of testing for both vitamins A and D is the official one. The minimum values given for vitamins A and D are such that no genuine cod liver oil prepared with ordinary care should fall below these levels.

The publication of the B.S.I. Specification for Veterinary Cod Liver Oil can be considered as a step in the right direction, and if oil were exclusively bought under this specification it would eliminate many of the undesirable practices which have characterised certain sections of the trade for some considerable time. (See Common, R. H., 1937, *Analyst*, **62**. 784.) The specification, one understands, is to be reviewed after a period of 12 months when the standards may be revised and modifications introduced if found to be necessary in the light of further knowledge and experience.

N. J. S.

ABSTRACTS

[A Contribution to the Study of Nymphomania. (Trans. title.) Latteur, J. P. (1938.) *Ann. Méd. vét.* **83**. 12. 524.]

The author classifies this condition under four headings.

(*a*) Psychic causes. These types are rare, and the author quotes three cases rendered nymphomaniac by the continual proximity of the male. Treatment with anterior pituitary extract, 5 to 10 c.c. daily for three days, gave complete relief.

(*b*) Comprising cases observed in mares in which heat periods were too frequent or too prolonged. Whilst fertilisation was possible, abortion was frequently observed. There appeared to be an hereditary predisposition. Treatment comprised gonadotropin B from serum extracts of gravid mares. 100 to 300 S.U. were injected 72 hours before the presumed onset of oestrus, and the mare was served at the end of oestrus. Two further doses were given at 20-day intervals.

(*c*) These comprised permanent nymphomaniacs with cystic ovaries. The size and number of the cysts had no bearing on the intensity of symptoms, and treatment by expression of the cysts was followed by recurrence. Cows were treated with anterior pituitary extract, 5 to 10 c.c., on three consecutive days according to body weight and intensity of

symptoms. Cysts were observed to disappear, and after a period of rest of not more than 20 days fertilisation occurred. Six out of seven mares, and five out five cows were successfully treated.

(*d*) Rare cases in which nymphomania was associated with great emaciation. There was an increase in basal metabolism as a result of hyperthyroidism. Treatment with anterior pituitary extract, together with thyroidectomy, gave complete relief.

The author concludes that nearly all cases of nymphomania are curable without recurrence by the administration of anterior pituitary extract. The expression of cysts is only a palliative measure.

G. V. L.

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[Navicular Disease. Jones, V. Berwyn. (1938.) *Vet. Jour.* **94.** 8-9. 347-354. Two graphs, three tables, three microphotographs.]

The author postulates that the parathyroids may have some influence in generalised bone diseases in equines and states that he has had three cases of this condition which showed clinical evidence of "enlarged unilateral thyroids."

In the first case the subject was a two-year-old thoroughbred filly which was observed to have enlarged fetlock joints; a very enlarged thyroid was removed. Microscopic examination showed a diffuse colloid goitre. No parathyroid tissue could be found in the tissue removed.

In the second case a four-year-old gelding became lame in both fore feet and X-ray examination showed well-marked navicular disease. A very enlarged thyroid was removed and microscopically was found to be a diffuse colloid goitre.

In the third case a nine-year-old polo pony was shown by radiographic evidence to have navicular disease. There was no palpable goitre, but the thyroid was removed from the same side as the lame leg. Microscopic evidence showed an inactive thyroid.

The first case is stated to have been materially improved three weeks after the operation.

The second case did not improve immediately but three months after the operation was clinically sound. The third case trotted level the day following the operation.

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[Rinderpest in African Game. Carmichael, J. (1938.) *J. Comp. Path. and Therap.* **51.** 4. 264.]

Records of infection of African game with rinderpest are discussed, and laboratory infections of waterbuck, Uganda cob, sitatunga, bushbuck, reedbuck, oribi and bush-pig are described. Eland and buffalo are the most important disseminators of rinderpest owing to their wide range of movement, whilst pig, particularly in forest areas, tend to maintain the virus for long periods. Buffalo tend to scatter when infection appears in a herd and many may become dangerously aggressive when affected with the disease. Some observations indicate that cattle infected from pig or buffalo contract only a mild infection, but the virulence increases as the strain passes through cattle.

U. F. R.

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[Observations on Breeding and Development of Marten, Martes a. americana (Kerr). Brassard, J. A., and Bernard, R. *Canadian Field Naturalist.* **53.** 15-21.]

Marten have been kept in captivity in the Quebec Zoological Gardens since 1931 and births have occurred since 1933. Matings have taken place in August and births in March and April. The period of gestation was from 220 to 230 days. The young were weaned at six to seven weeks, and attained adult weight at about three months. Adult males averaged about 1,100 grammes and adult females about 750 grammes. The ears opened at 26 days and the eyes were fully opened at 39 days. The fur was marked with dark grey stripes at ten days; these disappeared at about 25 days. The permanent dentition was complete at 18 weeks.

J. T. E.

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[A New Coccidium (Cryptosporidium vulpis sp. nov.) in the Fox. Wetzel, R. (1938.) *Arch. wiss. prakt. Tierhlk.* **74.** 1. 39-40.]

Wetzel gives a morphological description of the oöcysts of *Cryptosporidium vulpis* n. sp. The material was obtained from one of two six-week-old red foxes unearthed from scrubland. In addition, eggs of *Toxocara canis*, *Uncinaria stenocephala* and oöcysts of *Isospora* sp. were found in the faeces. The author places the new coccidium in the genus *Cryptosporidium* because the oöcysts, which measure 13·5 $\mu \times 8\,\mu$, are asporocystic, and produce sporozoites without sporocysts. In a short discussion, Wetzel points out how the new parasite differs from its near relatives, *C. muris* and *C. parvum*. The experimental feeding of a dog with oöcysts failed to produce infection.

J. N. O.

An effort is to be made by the Council of the Clydesdale Horse Society to restore the Government grant to smallholders for heavy horse breeding purposes. Their complaint is that this grant, which was of great benefit to smallholders north of the Tweed, had been maintained annually in England, and the view of the Council is that Scotland is entitled to equal consideration and treatment.

REPORT

[City of Birmingham: Report (58th annual) of the Chief Veterinary Officer, for the year 1938.]

It will be seen from the report that there are eight veterinary surgeons and thirteen certified meat and food inspectors.

The first section of the report deals with the inspection of meat and other foods. In addition to the public abattoir there are 85 private slaughterhouses in the City area, the total number of animals slaughtered in the City during the year being 797,483. The amount of foodstuff condemned was approximately 1,207 tons.

The next section of the report deals with the work carried out by the Veterinary Department under the Diseases of Animals Acts. In this section it is seen that there were one outbreak of foot-and-mouth disease in April, 69 cases of suspected swine fever and 15 cases of tuberculosis dealt with in the City during the year.

The report next deals with the inspection of dairy herds in the City area, of which there are two "tuberculin-tested" herds, 18 "accredited" herds and 40 "non-designated" herds. In connection with the work for the elimination of tuberculous infection from the milk supply it is recorded that 2,544 samples of milk were taken, of which 222 samples were found to be infected.

Under the section of the report dealing with the Corporation stud, it is seen that there are 331 horses. Several tables give the cost of provender, shoeing, harness, etc. The various institutions connected with the Corporation are supplied with feeding stuffs for the animals by the Veterinary Department.

Erratum.—We regret that, owing to faulty transposition of lines on the part of the printer, in effecting proof corrections, the second paragraph of Mr. S. F. J. Hodgman's opening of the discussion on Colonel Greenfield's address on Professional Ethics to the Central Veterinary Society, published in our last issue, was rendered unintelligible. It should read (page 825): "He says several things that need saying, and up till now have been only muttered. We all know that certain members of our profession are not too nice in their observance of the ethics that should govern our conduct. We grumble to one another about the practices of such men but our private complaining while it relieves our tempers, does nothing to check the conduct that we condemn."

ROYAL COLLEGE OF VETERINARY SURGEONS

ANNUAL GENERAL MEETING

The ninety-sixth annual general meeting of the Royal College of Veterinary Surgeons was held at 10, Red Lion Square, London, W.C.1, on Thursday, June 1st, 1939, at 12 noon.

Mr. G. H. Livesey, M.R.C.V.S., President, occupied the Chair, and there were also present:—

Messrs. F. Blakemore, T. J. Bosworth, Major H. H. Brassey-Edwards, Lieut.-Colonel J. W. Brittlebank, Mr. W. Brown, Professor T. Dalling, Mr. R. Eaglesham, Major F. Leeds Gooch, Mr. H. C. P. King, Mr. D. L. Hughes, Major W. H. Kirk, Sir John M'Fadyean, Dr. R. F. Montgomerie, Colonel Sir Arthur Olver, Mr. C. W. Ottaway, Mr. N. J. Scorgie, Lieut.-Colonel P. J. Simpson, Captain John Smith, Mr. A. Spicer, Captain W. K. Townson, Colonel G. K. Walker, Mr. W. Woods, Mr. C. E. Woodrow, Professor G. H. Wooldridge, Dr. W. R. Wooldridge, Mr. A. N. Worden and Professor J. G. Wright.

The Secretary read the statutory notice convening the meeting.

The Secretary announced that apologies for inability to attend the meeting had been received from the following members of Council: Major Dunkin, Mr. Dolan, Mr. Holroyd, Mr. McIntosh, Mr. Male, Captain Mitchell and Captain R. Simpson.

The minutes of the previous annual general meeting (June 2nd, 1938) having been published and circulated, were taken as read and they were confirmed and signed as correct.

Election of Council

The Secretary read the auditor's report on the election of the Council, which was dated May 30th, 1939, from Messrs. Wilkinson, Chater & Co., Chartered Accountants, of 28, Queen Street, London, E.C.4, and was as follows:—

"We certify that we have checked the Voting Papers sent in for the Annual Election of Eight Members of the Council of the Royal College of Veterinary Surgeons, and the Number of Votes obtained by the Fifteen Members nominated for the vacancies are set out below against their names.

Names	*Votes*
J. W. McIntosh	698
G. P. Male...	679
J. G. Wright	600
W. C. Miller	572
W. R. Wooldridge	569
J. Holroyd	546
A. Olver	544
A. Spicer	539

Names	*Votes*
H. W. Steele-Bodger	535
R. E. Glover	519
A. W. Whitehouse	462
W. H. Kirk	457
T. Hare	427
T. D. Young	374
G. N. Gould	344

There were ten spoilt papers, and a number of papers were received too late.

(*Signed*) Wilkinson, Chater & Co."

The President: I have pleasure in declaring the following members duly elected members of the Council: Messrs. J. W. McIntosh, G. P. Male, J. G. Wright, W. C. Miller, W. R. Wooldridge, J. Holroyd, A. Olver and A. Spicer.

Report of Returning Officer, Eire

The President: The next business is to receive the report of the Returning Officer for Eire.

The Secretary: I am informed by Mr. Kavanagh, who is the Returning Officer for the Irish Free State, that Mr. P. F. Dolan is returned unopposed, as a "general elected member," to serve on the Council for the next four years.

Annual Report and Financial Statement

The President: The annual report and financial statement have been sent to every member of the profession with the notice convening this meeting. You all have copies of the report, and perhaps somebody will move its reception. . . . It is moved and seconded that the report of the Council be received. It is now open for discussion and consideration. It is usual, I think, to take this report in sections. The first page is just a matter of record. On page 2 you have the new byelaws. Then on pages 3, 4, 5, 6, 7, 8 and 9 you have the report of the Examination Committee. Would you be desirous of taking the report of the Examination Committee page by page? Are there any questions or remarks on page 4, page 5, page 6, page 7?

Mr. Woodrow: Now we have come to page 7, Sir, may I raise a point on this report of the Committee on Veterinary Education. It is a matter of very vital interest, of course, to the profession, and we have only known the reason for the rejection by the Council of two of the main recommendations of the report during the last 14 days; in view of the general concern in the matter I would ask, if I might be so presumptuous, for the assurance of the President that these two very major points will receive further consideration in due course. I do not quite know if I might also extend that to the next paragraph, the next part of the report, which deals, perhaps, not so much with the Registration Committee, but with the question of non-members.

The President: No, we have not come to that yet. Will you confine your questions at the moment to the matter of the Loveday Report?

Mr. Woodrow: Yes. I do not wish to say much about that, but in view of the extreme gravity of the matter, and the extraordinary interest and concern of the profession as a whole in it, as has been developed in Divisional meetings of the "National," if we could just have the assurance of the President that those two points which I have mentioned will receive further consideration in due course, then I think that is all I have to say on this matter.

The President: Yes. I can answer that at once. The opinion you have expressed will be brought to the notice of the Council when this matter is further considered.

Then pages 8, 9 and 10 deal with the same matter. You will see there is the answer that the Council has sent—it is on page 10, and it is an interim answer—to the Ministry.

Then we pass to the Registration Committee. It begins on page 11, and runs on to page 14. Is there anything which members would like to ask on that, or to which they wish to draw attention.

Then on pages 15 and 16, dealing with the People's Dispensary for Sick Animals of the Poor, does Mr. Woodrow wish to call attention to something in that?

Mr. Woodrow: Yes. It is the same point there, Sir. It has appeared in the *Veterinary Record*, and also in a very large number of Divisional meetings of the "National," that a very grave concern is felt over this project, and that the misgivings of the practitioners have so far, unfortunately, not been allayed; and I would ask for the assurance of the President that that matter shall receive further consideration, particularly in view of giving the practitioners, perhaps, further reassurances on the matter so that their misgivings, which they have very much in mind at the moment, may be allayed in advance, and so that they may come round to support this finding. The whole matter has been threshed out, and there is no need for me to go into the detail of it; but you, Sir, know the points on which those misgivings are felt, and I feel that if we can have an assurance that if this will go back to the Council and to the Sub-Committee concerned, it will reassure the individual practitioners. That is all I have to say on this matter, Sir.

The President: Yes. Of course, the matter has been discussed, and it is a matter which cannot really be discussed in detail at a meeting like this; but your request certainly will have the consideration of the Registration Committee and of the Council in due course, and if it is

possible to give some statement which will, if I may use the expression, ease the minds of practitioners who may be concerned about it, I am sure the Council will be glad to do so.

The next matter in the report is the Parliamentary Committee, on page 16. That has been set out rather more fully than usual for your information, so that you may know exactly what has been done there, and for the purpose of putting it on record. Pages 17 and 18 and 19 are all on the matter of the Parliamentary Committee. Is there any point you wish to bring forward on that?

Then on page 19 the report deals with the proceedings of the Committee on the Identification of Animals for the purpose of Certification. You will notice that there has been put at the head of the report: "Note especially pages 19 and 20." This is the best means we have of recalling to every member of the profession the necessity for care in this matter. That is the reason for drawing your attention to it in this way. Is there any question on this?

Then we pass to the report of the Library and Publication Committee, which is just a record of what has been done. We were disappointed that the extra facilities which were given to readers to use the library in the evening were not made use of, and these facilities have been temporarily discontinued. Have you any question with regard to the library?

Then we pass on to the Finance and General Purposes Committee, on page 21. I have no doubt that you will be pleased to hear that the finances of the College are in a very healthy condition, better than they have been for very many years past, and we can only hope that this progress will continue.

At the end of page 21 there is just a note about the Register. You will see that there has been an increase in the number of practitioners, but there are still too few holders of the D.V.S.M.; the number of existing registered veterinary surgeons is rapidly diminishing.

Pages 23 to 28 contain the financial statements. Is there any question with regard to that which you wish enlightenment upon?

Pages 29 and 30 contain a record of the losses by death which the profession has suffered.

If there is no discussion on the report, will somebody move that the report be adopted?

Colonel Walker moved, and Major Townsend seconded, the adoption of the report, and the motion was carried unanimously.

Presentations

FitzWygram Prize and Williams Memorial Prize

The Secretary: Mr. Wilson Clark was invited to attend this Council meeting, but he has not been able to come.

The President: Mr. Wilson Clark, M.R.C.V.S., has been awarded the FitzWygram Prize and the Williams Memorial Prize, and the prize certificates will be forwarded to him.

Walley Memorial Prize

The President: The winner of the Walley Memorial Prize is Miss Florence Mary Pocock. Miss Pocock is here; will she please come forward?

The President presented the prize certificate to Miss Pocock, saying, "I wish you every success in your career." (Applause.)

Vote of Thanks to the President

Colonel Simpson: It is with very great pleasure that I rise to propose a vote of thanks to the President. I feel that we must all admire him for the most able way in which he has carried through the business of this meeting to-day, and we thank him also for not detaining us any longer than was necessary. I beg to move a very hearty vote of thanks to the President for his conduct in the Chair.

Colonel Brittlebank: I have pleasure in seconding that. There is no question about it that we have a President of whom we should be extremely proud. He has had an extraordinarily trying year. Those of us who have been in the Chair know what it means, and I think Mr. Livesey's year has been more trying than most. I think he has carried himself with that dignity and justice to everybody which marks out his year as President in a very distinctive way. There is no doubt that our thanks are very much due to Mr. Livesey for the way in which he has carried out the business of this meeting, too, and I have very much pleasure in seconding the vote of thanks.

The motion was put to the meeting and carried with acclamation.

Mr. John Smith: I do not know whether I am in order at this late stage in saying something, but may I ask before the meeting closes to say this: Under ordinary circumstances I know very little of what the President of the Royal College of Veterinary Surgeons does during the year, but, as you know, during the past year it was my fortune, or otherwise, to have to meet him on many occasions; and upon those occasions I know that he did everything in order to represent the views of this Council and of the profession to those who were willing and anxious to agree. I therefore feel that this year, at any rate, I can endorse very, very sincerely the vote of thanks to the President. (Applause.)

The President: I thank you, Colonel Simpson and Colonel Brittlebank, and you, Sir, for the kind way in which you have supported this

N.V.M.A. DIVISIONAL REPORT

Royal Counties V.M.A.*

MEETING AT AYLESBURY

An ordinary general meeting of the above Association was held at the Bull's Head Hotel, Aylesbury, on April 28th, 1939.

The President, Lt.-Col. J. P. Simpson, occupied the Chair, and the following members attended: Messrs. L. G. Anderson, N. S. Barron, J. R. Baxter, H. Bell, J. Bell, Capt. H. B. Collet, Major G. W. Dunkin, Lt.-Col. H. Greenfield, Major R. C. G. Hancock, Mr. E. J. Heather, Capt. J. R. Hewer, Mr. T. W. Lepper, Capt. W. S. Little, Mr. T. W. Stobo, Major F. J. Taylor. Messrs. A. E. Breakspear, F. H. Grimbleby, A. Mair and J. Richardson were present as visitors.

The minutes of the November meeting, having been published in the *Veterinary Record*, were taken as read and signed as correct.

The following members apologised for inability to be present: Major J. Bell, Mr. R. M. Davidson, Major A. C. Duncan, Sir Frederick Hobday, Major W. H. Kirk, Messrs. J. W. McIntosh, G. P. Male and Col. G. K. Walker.

Correspondence.—The Hon. Secretary read a letter from Major Kirk in which he suggested that the Association ought to take steps to prevent clashing of dates of meetings of the various Divisions of the "National." Major Kirk said that he would have liked very much to have been present that day, but he was unable to attend as he was down to give a paper at a meeting in Birmingham.

During the course of discussion it was pointed out that the "Royal Counties" had held its meetings on set dates for the past 30 or 40 years, and furthermore that these dates were published in the "National" year book. After a member had expressed the view that any regulation of dates by the headquarters of the "National" should be opposed because the dates of the meetings should be fixed for the convenience of the members of the Division concerned, it was unanimously decided that no action should be taken.

*Received for publication May 25th, 1939.

The Secretary also read a letter from the Royal Sanitary Institute inviting the Association to appoint a delegate to attend the Annual Congress which is to be held in Scarborough from July 3rd to 8th, 1939. It was decided that the Association should send a delegate; the delegate to be the President or his nominee, expenses to be allowed at the "National" rate.

Election to Membership.—Mr. S. J. Edwards, of Compton, on the proposal of the President, seconded by Major Dunkin, was unanimously elected to membership.

Nomination for Election to Membership.—Mr. A. Mair, B.Sc., proposed by Capt. H. B. Collet, seconded by Mr. T. W. Stobo.

Election of Representatives on Council of N.V.M.A.—It was decided to re-elect the existing representatives, namely, Lt.-Col. Greenfield, Major R. C. G. Hancock, with the Hon. Secretary *ex officio*.

Place of Next Meeting.—On the proposal of the President, seconded by Mr. J. Bell, it was decided to hold the summer meeting at Maidenhead.

Morbid Specimens and Cases of Interest

Earlier in the meeting the President had remarked how pleased he was to see at the meeting that day Mr. Tom Lepper, one of the founder members of the Association.

Mr. Lepper now recounted an interesting case which he had met with in a foal. He was called to see the animal because it had a stoppage 12 hours after birth. He found the anus was patent and that the finger when introduced into the rectum revealed no obstruction. Aperient medicine and copious enemata were administered but the foal died later in the day. The *post-mortem* examination revealed a condition which Mr. Lepper had not seen before: the rectum was found floating and to end in a blind sac rounded off like the finger of a glove.

Capt. Hewer reported a case of impaction or stoppage in a foal with colicy pains. He adopted Lang's treatment with salt solution. A double handful of faeces was voided, the salt acting miraculously.

Any other business.—The President said that, as the members probably knew, Mr. J. McIntosh unlike most of his fellow countrymen was soon returning to his native Scotland. He did not think it necessary for him to enlarge on what he had said at the Annual Dinner at Oxford as to Mr. McIntosh's long years of faithful membership, during which time he had occupied the Presidential Chair. The President then proposed that the name of Mr. McIntosh be added to the names of Honorary Associates. The proposition, seconded by Major G. W. Dunkin, was received with acclamation.

vote. I am very glad to be of any service to the profession.

The annual general meeting then terminated, and the general meeting of members of the Victoria Veterinary Benevolent Fund followed immediately.

Some Observations on the Dangerous Drugs Acts

The President now called upon Mr. A. E. Breakspear, M.P.S., to present his paper on the above subject.

In the course of his observations Mr. Breakspear said that he thought that the first thing he should attempt to do in that paper was to define a dangerous drug—and to put it as briefly as possible, he might say that a dangerout drug was any drug or admixture of any drug which was included in the list of Dangerous Drugs as issued by the Home Office, the chief of which were, as perhaps they knew quite well: (1) medicinal opium; (2) any extract or tincture of Indian hemp; (3) morphine and its salts; (4) diamorphine or heroin and salts; (5) cocaine and ecgonine, including synthetic cocaine—and there were, of course, many others which did not crop up so frequently such as thebaine, genomorphine, etc.

Now, if that were all there was in the Dangerous Drugs Acts, it would be quite easy to know where they stood, but it would have been far too simple for the lawyers, and it would have been absurd in practice, so they had quite a number of cases where preparations or admixtures of these drugs were exempted—for instance, morphine and cocaine and their salts when diluted with a substance that is not an inert substance and when the morphine content is less than 0·2 per cent., or the cocaine content is less than 0·1 per cent. But a solution or dilution of either morphine, cocaine or heroin with an inert substance as water or milk sugar in any strength of solution or dilution is included in the regulations. But here one must note that the Home Secretary had stated that a dilution of one part tinct. opii with seven parts of aq. dest. does not come within the regulations, neither does a pastille containing 0·05 per cent. of cocaine in a glyco-gelatine base—nor a dilution of liq. morph. hyd. in aq. chlorof. or aq. menth. pip. containing less than 0·2 per cent. morphine.

There had been drawn up for chemists' use a very useful card, a copy of which he had brought with him, and which was practically indispensable to the chemist in business, as it gave a list of the preparations which are exempted from the regulations, also another list stating the maximum amount of a dangerous drug which can be prescribed in a mixture, pill, etc., so as to keep it outside the regulations—for instance, it was very simple when ordering liq. morph. hyd. in a mixture to refer to this card and find so long as the quantity of liq. morph. hyd. does not exceed 126 minims in one fluid ounce the prescription does not come within the scope of the Act.

The most important point that he understood he was to dwell on in this paper was what a veterinary surgeon must do when obtaining, supplying, prescribing or using any dangerous drug: what records he must keep; how he must store; and how he should treat the police inspector when he calls to inspect the register.

When obtaining any dangerous drug it was essential that on its receipt or within 24 hours thereafter he should make entry in a special register, which must have separate parts reserved for each of the different sections, the four chief being: (1) medicinal opium; (2) morphine and preparations; (3) diamorphine and preparations; and (4) cocaine and preparations.

The entries must be made showing: (1) date on which supply received; (2) name and address of supplier; (3) amount obtained; (4) form in which obtained.

Similarly when dangerous drugs are supplied to any person, a similar entry must be made showing: (1) date when supplied; (2) name and address of supplier; (3) amount supplied; (4) form in which supplied.

The Act states that the regulations only apply when the drugs are supplied to a person or firm, as against being administered, therefore he thought they could take it as correct that a veterinary surgeon could himself administer any dangerous drug to an animal, and need not make any entry of such. If, however, the drug was supplied to the owner of the animal, then an entry in the register must be made. If the veterinary surgeon wished to order any dangerout drug on a prescription, then the prescription must comply with the following regulations. It must: (1) be in writing, which includes typewriting; (2) be signed with the prescriber's usual signature and dated by him; (3) state the address of the prescriber; (4) specify the name and address of the person to whom the preparation is to be delivered; (5) have written thereon "For Animal Treatment Only"; (6) specify the total amount of the drug to be supplied—but in this case if the preparation ordered is in the B.P. or in the B.P.C. it is sufficient to state the total amount of the preparation required.

A prescription for dangerous drugs might be repeated only if it was so stated on the prescription by the prescriber, who must insert the periods of time during which it might be repeated and even then it could be repeated only twice—in other words, the maximum number of times a dangerous drugs prescription might be dispensed was three, without a new prescription.

There was one regulation here which had been omitted from the Act, but which he was sure every chemist would like to have seen included—that was, that the prescription must be written sufficiently clearly as to make it

possible for any reasonably intelligent person to be able to read it.

As regards the storage of dangerous drugs in the surgery or the dispensary—the Act states very plainly that any dangerous drug or preparation thereof, must be kept so that only the person authorised to be in possession of the drugs can have access to them. But he thought it was generally agreed that it meant that dangerous drugs must be kept locked up, and the key must be in the possession of the authorised person; and here, of course, an authorised person meant definitely a person authorised by law to be in possession of dangerous drugs, such as a doctor, veterinary surgeon, chemist, etc., and not any unqualified assistant.

He had not yet referred to the regulations regarding the obtaining of supplies of dangerous drugs—any order for the supply of a dangerous drug other than those sent to the regular wholesale manufacturing chemists must state: (1) name and quantity of drug required; (2) date; (3) usual signature; (4) purpose for which required—*i.e.*, for surgery use.

If an order was telephoned an undertaking must be given to supply a written order or prescription, in accordance with the regulations, within 24 hours; if the order was not forthcoming the prescriber was liable and not the person who executed the order.

A veterinary surgeon might obtain a dangerout drug by calling personally at a chemist's shop and signing the chemist's poison register, but in this case the chemist who supplied must be sure that the person he was supplying was a person who was authorised to be in possession; in other words, the chemist must know he was a qualified veterinary surgeon—and in the case where he was not known to the chemist, the mere production of a visiting card was not sufficient evidence.

Mr. Breakspear, in conclusion, said that he thought he had now covered most of the chief points of practical interest, but if there were any queries that arose in the minds of anyone present, he would be pleased to hear them expressed aloud—but whether he would be able to answer them was quite another matter, as he believed there were many points in the Act that would puzzle the Triumvirate of the House of Lords Appeal Court.

The following members contributed to the discussion which followed Mr. Breakspear's paper: Messrs. J. R. Baxter, J. Bell, Capt. J. R. Hewer, Major R. C. G. Hancock, Mr. E. J. Heather, and Major G. W. Dunkin.

"The Examination of Material for the Diagnosis of Disease in Animals."

In the course of a short paper by Mr. F. H. Grimbleby, B.Sc., A.I.C., on "The Examination of Material for the Diagnosis of Disease in Animals," Mr. Grimbleby offered some practical advice to those sending material to the bio-chemist for analysis. Speaking on the subject of the sampling of biological material, he stressed the importance of producing a sample truly representative of the bulk, and of supplying the analyst with sufficient material to make an exhaustive examination if necessary. Where possible at least one to two pounds should be forwarded. Where the stomach contents of a large animal were sampled down, it was essential that the total weight of the stomach contents should be known, so that the total weight of any injurious constituent, if present, might be computed. The total weight present must be known before it could be stated definitely whether or not the substance was present in sufficient amount to cause death. The sample should be sent packed so that no loss of volatile constituents could occur during transit. Mr. Grimbleby suggested Killner jars for this purpose. If much water was lost by evaporation there might be concentration of a non-volatile poison, or there might be total loss of a volatile poison like prussic acid.

Problems in which the chemist could materially assist the clinician were of two types. Firstly, cases of suspected poisoning. Poisons might be grouped broadly under three headings: the inorganic poisons such as arsenic, lead, zinc, phosphorus, etc., all of which were easily detectable, and readily estimated; the organic poisons, which included firstly food poisons such as those occurring in stale food, and arising from the breakdown of protein material by enzymes. Such poisons were difficult to detect chemically. Animals varied considerably in their susceptibility to this type of poisoning, but trouble was found chiefly with pigs and fowls which consumed much food that had been mixed wet and allowed to stand for some time. Similar toxic bodies appeared also in contaminated water. In a dry season a farmer might have to water his stock from a supply which he would normally avoid, and the analyst received many samples of water, obviously foul, during such periods. But the chemist must necessarily condemn a water that did not nearly approach those limits laid down for waters for human consumption, because, although it was known that cattle can consume some foul waters without ill effect, no limits had been fixed. Mr. Grimbleby stressed the desirability of having the sample collected by a qualified man. Half a gallon was required by the chemist.

The second group of organic poisons included the plant poisons, the alkaloids, and the glucosides. The clinician could usually, by his examination, indicate the presence of alkaloids, and generally speaking, the chemist could detect and estimate alkaloids fairly readily. Fortunately few British plants contained highly active alkaloids.

Poisoning by glucosides was much more common, and much less readily detected. Glucosides existed in plants for their protection against insects, and adjacent plant cells contained the glucoside and the enzyme required to split it. Cyanogenetic glucosides existed in most concentrated foods, but trouble here was not likely to arise if the food was kept in good condition, and not fed in excessive amounts. Here the essayist described the following test for HCN, which, although not specific, was useful in that a positive result indicated that further chemical investigation was necessary.

Strips of blotting paper are dipped in a 10 per cent. solution of gum guaiacol in commercial alcohol, and allowed to dry in the air. Then just before the test is made the strip is moistened with a 0·1 per cent. solution of copper sulphate. The suspected material is acidified with tartaric acid in a stoppered bottle, and the test strip placed in the neck of the bottle and held in place with the stopper. If HCN is present the paper turns green and then blue, slowly if there is little present, but immediately if the concentration is high. The test is very sensitive.

Another group of glucosides often causing trouble was the saponins. These were present chiefly in members of the gourd family. The ordinary vegetable marrow had been known to revert, and manufacture large quantities of the substance. The glucoside of convolvulus was a saponin. Saponins were strong haemolytic poisons and violent purgatives. They had the property of lowering the surface tension of water, causing it to foam easily. There were no specific chemical tests for individual members of this group, and the best indication of their presence was the presence of saponin-bearing plants in the stomach.

Poisons which acted in the opposite manner to the saponins were the tannins. These were strong astringent poisons existing in the leaves of the privet, rhododendron, and some other evergreens.

Before leaving the subject of poisoning Mr. Grimbleby said he would like to refer to the possibility of metallic contamination of water stored, or running over galvanised iron. Iron was protected from rusting by coating it with one of two metals, *viz.*, tin or zinc. Protection was perfect until a flaw developed in the protective coating and the iron was exposed, when in both cases an electrolytic cell was produced. In the case of the tinned iron, the passage of the small electric current accelerated the dissolution of the iron, and before the question of tin poisoning could arise, the vessel would be discarded as useless. But in the case of the zinc vessel, the electrolysis brought about the dissolution of the zinc, the iron being preserved meanwhile. In this way appreciable quantities of zinc would appear in the water, and might cause poisoning.

Referring to pathological cases, the essayist said that much of the knowledge of clinical chemistry had been gained by experiment on animals, and that knowledge was available for the help of the veterinary surgeon. But Mr. Grimbleby suggested that a close co-operation was necessary if positive results were to be obtained in this field. If the chemist was given all the facts of the case, he could often save himself a lot of time and trouble, and produce a result that was of use to the clinician. To send in to the analyst, say, a bottle of urine with the plain request for an analysis or for a test for an abnormal constituent was not fair to the chemist. In pathological cases a constituent might be an unusual one if it was present at all, or it might become an unusual one because it was present in abnormal amount. If he was given all particulars, the chemist might not produce a positive result the first time, but he did at least narrow down his lines of search, and if he received a later sample he had eliminated many estimations from his analysis, and so could proceed deeper into the problem.

A discussion followed, to which the President, Major Dunkin, Captain Hewer, Mr. Anderson, Major Hancock, Captain Little and Mr. N. S. Barron contributed, while Mr. Grimbleby amplified many of his remarks and answered numerous questions.

At the close of the meeting the President proposed a very hearty vote of thanks to the two essayists, Mr. A. E. Breakspear and Mr. Grimbleby, for coming there that day and presenting such interesting papers. The President also proposed a hearty vote of thanks to Captain Collet, Mr. Stobo and Mr. Mair, who had provided tea for the members and visitors.

H. Bell, *Hon. Secretary.*

COD LIVER OIL SURVEY IN INDIA

One hundred samples of medicinal cod liver oil and its preparations, with both foreign and indigenous labels, obtained from the civil hospitals, customs department and the open market in different provinces of India have been examined in the Government Biochemical Standardisation Laboratory for purity and vitamin A content. According to the *Indian Medical Gazette* (April, 1939, page 215), 64 samples failed to satisfy the B.P. requirements; 25 samples were found to be deficient in vitamin A, and four samples out of this group were completely devoid of vitamin A. The acid value of one oil was 18·8 and of another 31·8. This survey, the first of its kind in India, reveals a very unsatisfactory state of affairs, for neither the public nor medical practitioners can be aware of the poor quality of much of the cod liver oil which is offered for sale.—*Pharm. J.*

SIR FREDERICK HOBDAY

THE KING REPRESENTED AT THE FUNERAL SERVICE

His Majesty King George VI was represented by Mr. John Willett, M.V.O., M.R.C.V.S., Honorary Veterinary Surgeon to the King, at the funeral service of Major Sir Frederick Hobday, C.M.G., F.R.C.V.S., F.R.S.E., Past Principal and Dean, and Emeritus Professor of Surgery at the Royal Veterinary College, whose death we recorded with the deepest regret in our last issue. The choral service, which was held at Kensington on Wednesday of last week in the spacious and beautiful church, St. Mary Abbots, was movingly impressive. The Vicar, Prebendary Arthur E. Smith, who officiated, read the lesson from the seventh chapter of Revelations, and the 23rd Psalm and hymns "Hark! hark! my Soul" and "Just as I am"—particular favourites of Sir Frederick—were sung.

Lady Hobday unfortunately was not sufficiently well to attend. Members of the family and others in the large congregation included:—

Dr. F. T. J. Hobday, of Yeovil (son), and Mrs. F. Hobday, Captain Cecil Hobday (brother) and Mrs. C. Hobday, Miss Jessie Hobday (sister), Mrs. Arthur Galloway (sister), Mr. C. W. B. Hobday (nephew), Mr. Gerald Hobday (nephew), Mrs. H. M. Sayer (neice), Miss Margaret Cadmore (neice), Miss May Rowe (neice), and Mr. B. C. Newbold (cousin).

Members of the veterinary profession: Professor George H.. Wooldridge, Vice-Principal, Royal Veterinary College (President, representing the Royal College of Veterinary Surgeons), Professor J. Basil Buxton (Principal, representing the Royal Veterinary College), Mr. H. W. Steele-Bodger (President-Elect, representing the National Veterinary Medical Association; also the Society of Veterinary Practitioners), Mr. Geoffrey H. Livesey (Immediate Past-President, Royal College of Veterinary Surgeons), Mr. E. C. Lloyd (representing the Ministry of Agriculture and Fisheries), Mr. N. J. Scorgie (representing Dr. J. Molyneux Hamill (Ministry of Health), Brigadier C. A. Murray and Major Glyn Lloyd (War Office, representing the Officers of the Royal Army Veterinary Corps), Professor T. Dalling (representing the Institute of Animal Pathology, Cambridge, and the Royal Society of Medicine), Mr. H. E. Bywater (with Mrs. Bywater), Mr. N. King, Professor J. McCunn and Mr. J. Pickup (representing the Central Veterinary Society), Mr. J. L. Cormack (representing the Midland Counties V.M.A.), Mr. H. Bell, Mr. R. Willett and Major R. F. Wall (representing the Royal Counties V.M.A.), Colonel R. J. Stordy (representing Sir Robert Gower, M.P., and the Council of the R.S.P.C.A.), Mr. W. Brown (representing the *Veterinary Record*), Mr. R. Ambrose (with Mrs. Ambrose), Mr. J. K. Bateman (with Mrs. Bateman), Mr. Ll. E. W. Bevan, Dr. W. P. Blount, Mr. C. Trevena Bray, Mr. Ernest Gray, Mr. A. Ronald Green (with Mrs. Green), Lieut.-Colonel H. Greenfield, Captain O. V. Gunning, Mr. R. Hancock (with Mrs. Hancock), Dr. Tom Hare, Mr. C. S. Haselden, Mr. J. R. Hayhurst, Mr. J. W. H. Holmes, Mr. R. Hudson, Captain H. E. Jackson, Sir John Kelland, Mr. W. S. King, Lieut.-Colonel G. P. Knott, Major T. Lishman, Mr. G. P. Male, Captain Dunlop Martin, Brigadier H. S. Mosley, Lieut.-Colonel W. S. Mulvey, Mr. K. Ollerhead, Mr. Arthur Payne, Lieut.-Colonel E. M. Perry, Mr. W. Perryman, Mr. S. E. Sampson, Lieut.-Colonel P. J. Simpson, Dr. A. W. Stableforth, Mr. H. Stainton, Major W. Squire Stevens, Mr. A. Sutherland, Major F. J. Taylor, Miss O. Uvarov, Lieut.-Colonel T. Dunlop Young.

Alderman F. W. Parsons (Town Clerk, representing the Mayor of Kensington), Professor William Bulloch (representing the Lister Institute), Mr. Mortimer Woolf (representing the Hunterian Society), Dr. A. Morris (President, representing the Harveian Society), Dr. S. M. Findlay (representing the Wellcome Research Institute), Mr. W. McAdam Eccles (representing St. Bartholomew's Hospital), Professor H. A. Gardner (representing the Medical School, St. George's Hospital), Dr. H. A. Baylis (representing the British Museum).

Mr. G. C. Freke (representing Court of Governors, Royal Veterinary College), Dr. Fred Bullock (Secretary and Registrar, Royal College of Veterinary Surgeons) and Mrs. Bullock, Sir Patrick Hannon, M.P. and Lady Hannon, Dr. G. W. Clough, Mr. William Murdock, Lord Lawrence, Sir Thomas and Lady Carey Evans, Sir Harold Kenyon, Sir William and Lady Willcox, Sir D'Arcy Power, Sir Buckston Browne, Dr. Irwin Moore, Brig.-General Marchant, Brig.-General Ridgway, Sergeant Sullivan, K.C., Colonel F. Fail, Councillor G. W. Chambers, Councillor W. J. Saunders, Councillor A. R. Llewellin-Taylor, Councillor and Mrs. G. Walford, Councillor T. A. H. Way.

Mr. George Baker (representing the Savage Club), Mr. W. A. Sanderson (representing King Edward's Horse), Mr. A. C. R. Carter (Vice-President, Knights of the Round Table), Mr. Charles W. Berry (Order of the Knights of the Round Table), Mr. E. T. Neathercoat (Master, Worshipful Company of Farriers), Mr. D. H. Allport and Mr. F. P. Brindley (representing the Staffordshire Society), Mr. D. H. Sheppard (representing the R.S.P.C.A.), Brig.-General Sir George Cockerill (also representing the International League for the Protection of Horses), Major H. Hume Pollock (also representing the Blue Cross), Miss Duranty (Chairman) and Miss M. Schaffert (Founder-Director) (League for French Animal Welfare), Brigadier M. R. Walsh (Metropolitan Drinking Fountain and Cattle Trough Association), Mr. E. P. Carter and Miss Joyce M. Moore (representing the Universities Federation for Animal Welfare), Mr. W. E. Murts (representing Our Dumb Friends' League), Dr. C. O. Hawthorne (representing the People's League of Health), Mr. E. Bridges-Webb (representing Mr. F. de Vine Hunt), Mr. F. M. Sterry (representing University of London Athletic Ground), Mr. Harold Young (representing the Greyhound Racing Association), Miss Moore (also representing Mrs. Bertram Mills and Mr. Cyril and Mr. Bernard Mills), Mr. Richard Bolton (representing Agricultural Food Products, Ltd.), Mr. Arthur C. McLachlan (representing Circus Fans' Association of Great Britain).

Mr. H. L. Welch (Secretary, King's Colonials' Lodge), Captain C. E. G. Hope (also representing *Country Life* and *Riding*), Mr. A. A. Tindall (with Mrs. Tindall), Mr. R. F. West and Mr. H. E. Marsh (representing Baillière, Tindall & Cox), Mr. H. W. Eley (representing the *Veterinary Journal*).

Mr. Robert Barry, Mr. T. H. Billington, Miss Ada Bromley, Mr. George Brown, Mrs. Dorothy Carey, Dr. Mather Cordiner, Captain E. T. Cox, Mr. A. Cutter, Mr. Denys Danby, Mr. J. Morewood Dowsett, Mr. Edwin Fagge, Miss C. L. Gilder, Mr. K. N. Green, Mr. Hadfield, Mrs. J. P. Heath, Mr. William H. Hill, Mr. H. Hitchings, Major G. Hopkins, Mrs. G. O. Howard, Mrs. B. M. Howard, the Misses Hubbard, Mr. A. Rocyn Jones, Miss Leinn, Mr. S. H. Leonard, Mr. and Mrs. A. A. Mackay, Mr. H. E .Marsh, Mr. E. J. Messent, Mr. W. J. S. Moore, Miss Z. Newton, Mrs. E. C. Norris, Mr. G. A. Page, Miss Palgrave, Mr. W. J. K. Pearson, Dr. R. Perkins, Mrs. F. W. Philbeam, Miss L. H. Phillips, Mr. Holliday Pott, Mr. and Mrs. George Raphael, Mr. A. H. Richardson, Mr. W. J. Rothwell, Major E. Cracroft Russell, Mrs. H. M. Sayer, Mrs. G. A. Scott, Mrs. H. Scott-Dunn (representing Mr. H. Scott-Dunn), Miss Scott-Elliot, Mrs. A. Slade, Mr. Cyril Shields, Mrs. A. G. Sivell, Mrs. H. Stewart, Mr. T. H. Thatcher, Mrs. Thorney, Colonel G. H. Tomlinson, Dr. G. Clark Trotter (M.O.H., Islington), Dr. G. B. Turtle, Mr. J. Vernon, Mr. and Mrs. Toye Vise, Miss E. Watney, Mrs. Harris Weinberg, Mr. H. L. Welch, Mr. J. G. Wigginton and Mr. Harold Young, together with members of the staff (additional to those mentioned) and students of the Royal Veterinary College.

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Sir Frederick Hobday had expressed the wish that, instead of flowers, donations should be sent to the Poor Students' Fund of the Royal Veterinary College. The floral tributes, which were very beautiful, and all with moving expressions of sympathy, were therefore largely restricted to those sent by the family, and the following: the Principal and staff of the Royal Veterinary College; the Vice-Principal, Professor G. H. Wooldridge, and Mrs. Wooldridge; Dr. and Mrs. J. McCunn; the Governors of the College; the President and Members of Council of the Royal College of Veterinary Surgeons; the Students' Union, R.V.C.; the lay staff, R.V.C.; the Midland Counties Veterinary Medical Association; Brigadier C. A. Murray and the Officers of the R.A.V.C.; "Hamish and Ann"; and many bodies for the promotion of animal welfare.

The cremation ceremony took place late in the afternoon at Putney Vale Cemetery, only family mourners attending. On the following day the ashes were scattered over the family grave, where lies Sir Frederick Hobday's brother, John Hobday, M.R.C.V.S., who died in 1905. It was Sir Frederick's wish that this should be done—a desire increased for him by the knowledge that, but a few yards away, rests William Hunting, the founder of the *Veterinary Record*.

At the Horse Show of the Royal Dublin Society on August 8th to 12th, eight nations will compete in the international military jumping competition. These are Belgium, England, France, Germany, Italy, the Netherlands, Switzerland and Ireland.

SOME CONTEMPORARY CONTRIBUTIONS TO OUR KNOWLEDGE OF ANIMAL HUSBANDRY

(*Continued from page* 491)

Grass Silage

In the *Journal of the Ministry of Agriculture* for April, 1939, there is a useful article on Grass Silage, by F. H. Garner and H. G. Saunders, which contains information of value to our readers.

In the introductory paragraphs it is pointed out that although advance in grassland utilisation is following the lime and basic slag subsidy scheme, the root cause of grass deterioration during the last decade has been understocking, and that improvement will not be satisfactory until carrying capacity is fully utilised. Financial and marketing handicaps largely prevent the necessary increase in stocking, and methods of utilising surplus grass efficiently other than by grazing are of importance. This may be done by hay making, drying the grass or by ensiling some of the grass. To shut up a pasture during the flush of the spring grass and cut it for hay, causes deterioration of its future grazing capacities, for the clovers tend to be killed out by the luxuriant cereal grasses, etc., while the autumn flush can seldom be made into satisfactory hay.

Methods which will preserve young grass, so that it may be used for feeding in winter, result in a supply of a protein-containing food which reduces the winter stock feeding bills, makes the farm more self-supporting and the country more independent of importations of foodstuffs. The value of grass-drying still gives rise to controversy, but there is no doubt that capital costs, irregularities of season, droughts, and labour charges are serious handicaps to its widespread popularisation.

An alternative method which can be operated economically is worthy of serious consideration. Such a method is ensilage by one of the more modern methods.

Small Silos.—These may be built by ordinary farm labour of concrete, about 12 ft. 0 in. high with a part sunk in the ground (provision being made to avoid seepage of water from below). Some silos have walls only 6 ft. 0 in. high, which are heightened by temporary casings of boards, etc., these being removed when the silage has settled later. These are called "over-silos"; their walls may also be made of wire lined with strong paper, or the whole silo may be made with walls of these materials. This method allows of mobility; the silo can be erected in different fields to suit annual requirements. Such silos with a capacity of 30 tons cost only about £9 10s. 0d., and although the paper lasts only one year, the fencing wire has a longer life.

These silos are erected in three tiers, each of about 4 ft. 0 in. high; the sinking which results makes it necessary to make each tier a little smaller in diameter than the one below, so that the wire and paper walls will telescope within each other to some extent as the level of the mass falls. Sites must be carefully chosen, and the land levelled with a spirit level to avoid slewing and tilting. A rim of concrete at the bottom 1 ft. 0 in. wide, on which the lowest wire and paper wall rests, is useful. A grated drain to

carry off excess fluids is desirable unless the site is porous and well drained (*e.g.*, gravel). A trap in the drain pipe is necessary to act as a seal to prevent air from gaining entrance to the bottom of the silage.

Materials to Ensile.—Good quality fodder crops must form the raw material of good silage. Poor quality material makes poor silage. If young grass is to be used it should be cut when about eight inches high or less. This in the south is reached about the middle or end of May in normal years. In very wet years silage can be made from a hay crop which cannot otherwise be saved, or even from the flush of autumn grass, but the value in feeding will be less than that of young spring grass.

The grass may be cut with an ordinary mowing machine, or with one specially made, and it should not be allowed to wilt. Afterwards it is windrowed by a side-delivery rake and gathered with four-pronged forks. Only the best material should be lifted—rubbish, manure, stones, etc., being discarded. Harrowing and rolling of the ground, or even horse-raking tufts of dead grass, etc., may be needed early in spring to avoid gathering rubbish at cutting time.

Filling the Silo.—Chaffing and blowing the material into the silo gives best results, but filling may be by direct forking from the carts, or by elevator or horse fork. If not chaffed, the forkfuls must be shaken out and the surface kept rather high in the centre. Lumpy masses should be avoided because of the difficulty of getting rid of the air in the middle. Two or three men are needed for tramping, and these must do their work well, especially around the outsides.

The makers' instructions regarding erection of the wire and paper walls must be carried out carefully, special attention being paid to details. Cutting of the paper must be avoided, for unless intact, the air entering will damage the silage.

On completion of the filling, a layer of paper or sacks is placed to exclude air, and on this a covering of soil to a depth of 1 ft. 0 in. at the very least is placed. The extra work in topping off and covering the silage is well worth while, for air entering from above can ruin the value of the product.

Use of Molasses.—Butyric acid formed from the young ensiled grass will ruin the feeding value. This may be prevented by slow filling—allowing each layer to heat before the next is put on, but this method is tedious and costly, and leads to a great loss in food value. Butyric acid is not produced when the reaction is kept acid by the incorporation of hydrochloric, sulphuric or other acids during filling. This acid method is used abroad but has obvious disadvantages. The addition of sugar, which is rapidly fermented into lactic acid in the mass, is recommended instead. The cheapest form of sugar in Britain is molasses, containing about 50 per cent. sugars, but not molasses produced from sugar-beet because of the harmful betaine it contains and because of its laxative nature. An amount of about 3 to 4 per cent. of the weight of green herbage is added. The higher the protein content the more molasses should be added, but since an excess of sugar is harmless, it should be used generously. In the absence of facilities for weighing a few cartloads to get an average weight, it may be assumed that an ordinary farm cartload will be about half a ton.

The molasses may be mixed by allowing a thin stream to run from the barrel on to the feed of the cutter, or if chaffing is not carried out, the molasses is dissolved in hot water and sprinkled on to the surface, during tramping, from watering-cans. A sprinkling should be carried out after every four-inch layer of greenstuff is added (which in a 16 ft. 0 in. diameter silo is at the end of each cartload). The molasses must reach every part of the grass to prevent butyric acid formation, and provided drainage is satisfactory a little excess of water does not matter, and will aid in the distribution of the sugar. The top layers should be well saturated, so that the molasses will soak down into the mass. Molasses costs about about £5 per ton and this amount is enough for a 30-ton silo of 16 ft. 0 in. diameter.

Using the Silage.—The chief sinking occurs during the first month, and after that little effluent emerges from the drain and it is safe to commence using it if need be. Normally, however, it will not be wanted for feeding until autumn or winter. When once it has been opened, the silage must be used continuously, for if exposed to air for two days in hot weather, or three days in cool weather, a depth of two to three inches all over will go mouldy and be unfit to use.

It is best to open the top, and remove the amount needed for each day's feeding from the whole surface, each day's supply being taken as uniformly as possible. If there are fewer animals to feed than can utilise a two- or three-inch layer, an alternative is to slice the silo through the middle with a hay knife, leaving a dense clean-cut surface. This will mould for two or three inches depth only and must be discarded later. To cut out segments or sectors is wasteful, since each method entails the removal of the wire and paper wall and consequent deterioration around the periphery. If daily rate of consumption is expected to be low, it may be better to use two small silos rather than one large one. Two silos of 11 ft. 0 in. diameter each, hold about the same as one of equal height (*i.e.*, about 12 ft. 0 in.) which is 16 ft. 0 in. in diameter.

Value of the Product.—Silage produced in this manner has been fed in Holland in amounts up to 70 lb. per head per day to dairy cows. In Cambridge, up to 35 lb. daily has been fed to 18-month-old stores successfully. About 10 lb. of silage was found to be equivalent to 3 lb. of dried sugar-beet pulp in trials, but to contain a higher protein content. Its value would be quite 30s. per ton, and costs of the paper-wire method were found to be about 10s. per ton (including carting, filling, covering, molasses, etc.). No time is lost through bad weather, for men can be usefully employed at this work when other work is impossible during rainy weather. Costs of production are amply covered by the value of the product and the writers consider that the method should be destined to play a valuable part in future British agriculture.

At a meeting of the Council of the British Friesian Cattle Society in London, it was reported that the total of pedigree British Friesian 2,000-gallon cows would shortly reach 1,000; and a sum of money was voted to advertise the achievement and to call attention to the special class at this year's Royal Show at Windsor for 2,000-gallon cows of the breed.

IN PARLIAMENT

Poultry Bill in the Lords

To relieve the congestion of business in the Commons the Government's Bill to help the poultry industry was introduced on June 29th in the House of Lords, where it was well received and given an unopposed second reading.

The Earl of Feversham, Parliamentary Secretary, Ministry of Agriculture, moving the second reading, said that the annual production of the poultry industry amounted to more than £26,000,000, or over 10 per cent. of the total for the agricultural industry of Great Britain. The number of producers was so great as to defy exact calculation.

Since 1934 the economic position of the poultry industry had become weaker, and the number of poultry kept on holdings of one acre or more had fallen from 69,000,000 to 59,000,000, and the losses due to disease were estimated at more than £4,000,000 a year. The Government had brought forward legislation to deal with the two outstanding problems of the industry—serious losses due to debility and disease and the need for improved marketing.

It was proposed that the task of giving effect to the proposals under both heads should be entrusted to an independent Commission, established on lines similar to that under the Livestock Industry Act. It would consist of a chairman and not more than eight members, and would be assisted by two advisory committees dealing with stock improvement and marketing respectively. It had been proved since the Livestock Industry Act was passed that the advisory committee system worked smoothly and well.

Improvement of Stock

Clauses 2 to 5 contained the stock improvement provisions. The conclusion reached by the Poultry Technical Committee, under Sir Duncan Watson—whose proposals had been closely followed in the Bill—was that disease and debility had become so serious that the situation was one of emergency, and that nothing short of control of stock production would bring about the substantial improvement necessary within a reasonable period. The first of the control proposals was registration. Every distributor of poultry stock would be required to register with the Commission, who would at an early stage lay down simple preliminary regulations enabling them to deal with the more blatant malpractices. Later the Commission might be expected to formulate more detailed regulations designed to bring about a steady improvement in the standard of poultry keeping.

The Commission would not be able by "a stroke of the pen" to eliminate disease and debility from poultry stocks. That process was bound to be slow. Clauses 4 and 5 dealt with a voluntary accreditation scheme for breeders and hatcheries aiming at the production of healthy and high quality stock. The Government accepted the view that, under existing conditions, breders were not in a position to maintain such a high quality in their stock as was desirable, and deserved compensation for the extra time and labour of keeping records and the elimination of unsuitable birds by the offer of Exchequer premiums. A total limit of £250,000 spread over not more than seven years was laid down, and the premiums would be on a diminishing scale.

Earl Feversham then proceeded to deal with the provisions for marketing, regulation of imports, and egg storage, and concluded by saying that he was confident that the major provisions of the Bill would be generally approved by the industry; he gave the assurance that neither producers nor distributors need fear the sudden imposition of arbitrary regulations.

Lord Addison was critical of the Bill, mainly on the ground that it was not limited to the interests of producers, and he indicated that he would move an amendment on that point in Committee.

Lord Phillimore personally and on behalf of those for whom he spoke, expressed gratitude for the Bill and for the recognition that disease had been the worst enemy of the poultry industry in recent years.

The Earl of Radnor welcomed the Bill and said that it dealt with a section of the agricultural industry which had been crying out for something of this nature for a very long time.

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Replying to Mr. V. Adams in the House of Commons on Monday last, Sir R. Dorman-Smith, Minister of Agriculture, said that while the Government were anxious that the Poultry Industry Bill should proceed as rapidly as possible, and had recently taken steps designed to accelerate its progress, it was impossible, in view of the heavy Parliamentary programme, to give the assurance that the Bill would be passed into law before the summer recess.

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The following questions and answers were recorded in the House of Commons recently:—

Poultry-Breeding Stations Scheme

Sir Gifford Fox asked the Minister of Agriculture whether the decision to expend at this time £2,000 from the Exchequer for the purpose of maintaining a free blood-testing service for the accredited poultry-breeding stations was reached after full consideration of the fact that there are adequate commercial facilities in the country for the carrying-out of this work to the required standard of accuracy; whether the laboratory at Weybridge is continuing to carry out these tests at 1½d. each, on request, for any

poultry-keeper outside the accredited poultry-breeders scheme; and what objection there is to entrusting the blood-testing required by the industry to commercial laboratories to be approved by him?

Sir Dorman-Smith: The decision to provide the free services to accredited breeders of poultry in England and Wales under the Agriculture Act, 1937, only at the Ministry's Laboratory at Weybridge was reached in the full knowledge that other laboratories also provide blood-testing facilities, and was taken with the object of ensuring that a service on which public money will be expended shall be carried out under the control of my Department. The reply to the second part of the question is in the affirmative, and to the last part that, apart from blood tests required under the Accredited Poultry Breeding Stations Scheme, the breeder's choice of a laboratory for blood tests is unrestricted.

Sir G. Fox: Is my right hon. and gallant Friend pleased to think that this policy will lead to State trading competing with private enterprise?

No answer was given.

Attested Herds Scheme

Mr. W. Roberts asked the Minister of Agriculture whether he proposes that free testing of cattle for contagious abortion should be now included in the provisions of the Attested Herds Scheme?

Sir R. Dorman-Smith: Under the powers conferred by Part IV of the Agriculture Act, 1937, a scheme is being framed whereby owners of attested herds will be assisted, by the provision of free veterinary advice and free blood testing, to protect such herds as are already free from abortus infection and to eliminate disease from abortus infected herds. I hope to be in a position to introduce the scheme within the next few months.

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Racecourse Betting (Totalisator Fund)

Sir T. Moore asked the Home Secretary whether he is aware that, according to the tenth annual report of the Racecourse Betting Control Board, allocations from the totalisator fund included £158,850 for the improvement of racecourses and racing, and only £16,150 for the improvement of all breeds of horses; if he can indicate how much of this latter amount was allocated to the improvement of horse-breeding in Scotland; and whether he can ensure that in future more generous allocations are made for this purpose, and in particular to encourage the breeding of Clydesdale draught-horses?

Mr. Peake: As regards the first part of the question, I would refer my hon. Friend to the reply given on June 22nd to questions by the hon. and gallant Member for Howdenshire (Major Carver) and the hon. Member for Henley (Sir G. Fox).

As regards the second part, the board have supplied my right hon. Friend with the following information:—

The grants made by the board from the surplus in the Totalisator Fund at December 31st, 1938, towards the improvement of horse-breeding and the advancement and encouragement of veterinary science and education in Scotland are as follows:—

Improvement of Breeds of Horses.

£600 to the Hunters' Improvement and National Light Horse Breeding Society—for four premiums of £150 each for stallions travelling in Scotland.

£75 to the National Pony Society—for two premiums of £37 10s. each for stallions of Highland breed.

Of the grant of £1,000 to the Royal Agricultural Society of England for the purpose of increasing the prizes at the Society's Centenary Show in 1939, £35 was in respect of a new class for Clydesdale fillies born in 1938, £90 was for prizes for Shetland ponies, and £21 was for prizes for a new class of Dales, Fell or Highland ponies.

No fresh grant was made to the Clydesdale Horse Society in 1938, because, as explained in paragraph 32 of the board's report for that year, a substantial part of the grant of £500 made in 1937 was still unexpended.

Veterinary Science and Education.

The £1,500 granted to the Agricultural Research Council towards the cost of investigation into the various diseases and disorders of horses will be applied in assisting *inter alia* research work at the Moredun Institution and the Royal (Dick) Veterinary College, Edinburgh. £750 was granted to the Royal (Dick) Veterinary College, Edinburgh, towards the building fund. £500 was granted to the Glasgow Veterinary College towards the cost of microscopes.

It should be noted that the sum of £16,150 mentioned in the question includes £4,500 allocated towards the advancement and encouragement of veterinary science and education. The board assure my right hon. Friend that they will be glad to consider any suggestions which may be made to them for giving further assistance towards horse-breeding in Scotland.

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Milk Industry Bill

The Milk Industry (No. 2) Bill, which was introduced in the House of Commons on June 29th by Sir Reginald Dorman-Smith, is a revised version of the Milk Industry Bill which was withdrawn last February before it reached the stage of second reading because of the opposition of Government supporters to many of its proposals. The original Bill was introduced by Mr. W. S. Morrison when he was Minister of Agriculture. It incorporated a long-term policy for the milk industry which had been adopted by the Government and outlined in a White Paper issued last July.

The first Bill contained, among other things, provisions for setting up a milk commission to supervise the industry, for experiments in the rationalisation of milk distribution in not more than ten selected areas, and for making pasteurisation compulsory in any area on the request of a local authority. These proposals were strongly opposed by Government supporters and they have disappeared from the Milk Industry (No. 2) Bill.

The new Bill is another temporary measure which proposes during an interim period covering the two years, October 1st, 1938, to September 30th, 1940, to give effect to proposals for encouraging quality milk production, for assisting cheap milk schemes, and for payments to milk marketing boards in respect of milk used in manufacturing butter and cheese. These proposals are similar to those contained in the original Bill.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

July 13th.—N.V.M.A. National Emergency Committee, 36, Gordon Square, 3 p.m.

July 13th.—N.V.M.A. Finance and General Purposes Committee, 4.30 p.m.

July 17th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.

July 23rd—28th.—N.V.M.A. Congress at Great Yarmouth and Gorleston-on-Sea.

July 26th.—Annual General Meeting of the Ladies' Guild (V.V.B.F.), at Great Yarmouth, 11 a.m.

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R.C.V.S. OBITUARY

Lane, Arthur John, J.P., c/o Barclays Bank, Newington Green, N. Graduated London, May 19th, 1892. Fellowship May 12th, 1906. Died June 25th, 1939; aged 68 years.

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GENERAL OBITUARY

Chadwick.—Alice, wife of Major C. R. Chadwick, O.B.E., M.R.C.V.S., late R.A.V.C.T., at Alwiyah, Baghdad, on June 3rd, 1939, after a short illness.

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LIVERPOOL DEGREE EXAMINATIONS

The following are the University of Liverpool, School of Veterinary Science, Examination Lists for June, 1939, in connection with the University Degrees of D.V.Sc. and B.V.Sc.:—

Degree of D.V.Sc.

Taylor, E. L.

Degree of B.V.Sc.

Fourth Examination.—Clarke, R., Dye, R. W., John, H. M., Scott, Mary F. Passed in Separate Subject: Shaw, G. D. (Parasitology and Entomology).

Third Examination.—*Part I*: Craig, N. *Part II*: Bee, B. R., Clay, H. A., Coates, P. D. L., Foster, J. L., Gibson, T. E., Hopkins, C. D. (with distinction), Jones, D. K., McLaren, I. S., Mahmoud, A. H., Pickin, W., Shaw, I. G., Stabler, A. B. O., Wilson, A. A. *Part III*: Bee, B. R., [1] [2]Clay, H. A., Coats, P. D. L., Donnelly, J. F., Foster, J. L., Gibson, T. E., Jones, D. K., Pickin, W., Wilson, A. A.

[1]Distinction in Animal Husbandry.
[2]Distinction in Genetics.

First Examination.— *Part I* (Chemistry): Adams, Margaret A., Ainsworth, J. N., Brown, J. T., Chapman, F. A., Cohen, C. A., Duckett, A. L., Evans, S. D. S., *Ford, E. J. H., Hillis, Jennie, Hutchinson, J., Jarvis-Evans, D. G., Jennings, A. R., John, Alys M., *Langley, J. W., Loosmore, R. M., Parkinson, J. D., Platt, H., Porter, W. E., Pretty, P. M. S., *Saunders, C. M., Singleton, A. G., Stackwood, Eleanor S., Stubbs, G. B., Towers, K. G., Tudor, J. E., Wood, J. C., Woodward, A. W.

*Passed with distinction.

Part II (Physics): Chapman, F. A., Cohen, C. A., Duckett, A. L., Evans, S. D. S., Ford, E. J. H., Hillis, Jennie, Hutchinson, J., Jennings, A. R., John, Alys M., Langley, J. W., Loosmore, R. M., Nixon, R. I., Parkinson, J. D., Porter, W. E., Saunders, C. M., Singleton, A. G., Stackwood, Eleanor S., Towers, K. G., Tudor, J. E., Wood, J. C., Woodward, A. W.

Part III (Biology): Adams, Margaret A., Alexander, F. C., Applebey, Susannah L., Chapman, F. A., Cohen, C. A., Duckett, A. L., Evans, S. D. S., Ford, E. J. H., Griffith, E., Harbourne, J. F., Harries, J. O., Hewett, M. J., Hillis, Jennie, Hutchinson, J., Jarvis-Evans, D. G., Jennings, A. R., John, Alys M., Langley, J. W., Loosmore, R. M., Mutch, A., Parkinson, J. D., Platt, H., Porter, W. E., Pretty, P. M. S., Saunders, C. M., Singleton, A. G., Stackwood, Eleanor S., Stubbs, G. B., Theobald, C. G., Towers, K. G., Tudor, J. E., Walker, J., Wood, J. C., Woodward, A. W.

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INDIA'S VETERINARY PROBLEMS

Viceroy's Speech in opening Research Institute Buildings

Lord Linlithgow, Viceroy of India, in opening new buildings, comprising Animal Nutrition and Poultry Research wings, and residential quarters of the Substation at Izatnagar of the Imperial Institute of Veterinary Research, on March 11th, made an important speech—to which we allude also in the editorial columns of this issue—on the grave veterinary problems urgently awaiting solution in India.

The Viceroy said, states the *Hindustan Times*: Knowing my great interest in agricultural and veterinary matters, you will realise how glad I am to be here to-day for this, to my mind, most important occasion.

These two buildings which I have come to open and indeed the whole of this estate here, and the hill-top buildings in Kumaun which together form the Imperial Institute of Veterinary Research, represent not so much the maturing of a considered plan as a process of inevitable growth. It is a matter of common observation that in the medical profession the progress of attention has been from cure of disease to prevention of disease and then to the establishment of health. This progress does not mean that medical interest is directed towards the latter aim in substitution of the former. It merely indicates that with the growth of human knowledge and experience and of a proper understanding and use of scientific inquiry, attention which at first is confined to phenomena, extends itself to cover causes.

The general trend of veterinary activities presents a good example of this general progress which I have just described. Let me explain. The first point I would emphasise is the vastness of India's animal population, which is to the student perhaps the most significant characteristic of her veterinary problems.

She holds a substantial proportion of the domestic animals of the world. Indeed, with an estimated total of 215,000,000 animals, she carries over one-fourth of the world's stock of cattle and two-thirds of its buffaloes. In addition, she sustains something like 97,000,000 sheep

and goats. It is generally agreed that this aggregate of domestic animals is larger than is required in a properly balanced economy and that it imposes a too heavy demand in terms of fodder and feeding stuffs. There can be little doubt that the prevalence of animal disease in India is the main clue to the enormous stock of animals which India houses. In the past very heavy losses have been suffered from contagious diseases of animals, such as rinderpest, anthrax, surra, and the like. These losses menaced often the actual carrying out of agricultural operations which, since their timing and rotation is fixed by the cycle of seasons, must be punctually carried out, and will indeed wait for no man. In India the bullock is almost the only source of tractive power, and epidemics of animal disease may deprive the cultivator both of the value of his working bullocks and of a large part of his crop. So long, therefore, as disease reigned more or less uncontrolled, the cultivator and all who depended on the use of animals tended to carry a very large stock of them, since experience had taught that in the event of epizoötic disease there would then be the chance of sufficient animals surviving to enable them at least to carry on. Clearly, under conditions where these diseases had more or less a free run, numbers were more important than quality and with over-stocking and consequent shortage of fodder, it was unlikely that the average cultivator would maintain animals of substantial value.

Controlling Animal Disease

A first and essential step towards the improvement of the quality of our stock has, therefore, been the control of animal diseases, and it was to meet this need that this Institute was founded almost 50 years ago. The decades intervening provide a record of the success in this most important aim. This Institute has established a deserved reputation and if animal disease is no longer the terror in India that it was half a century ago, much of the credit must be given to this and to similar establishments elsewhere which have concentrated on the study of animal diseases and on the production of remedies and preventives for them.

The importance of preventive work, which is the second in the sequence I mentioned, was early realised, and those in charge of the Institute set themselves to organising this side of veterinary work. The serum products which this Institute has produced and of which it is now so large a supplier are, I am sure you will agree, a testimony to the efficiency with which this work has been carried out. The annual production of anti-rinderpest serum alone is over 700,000 doses, while the figures for other sera are equally of impressive dimensions. The rinderpest vaccine, in the development of which this Institute played a distinguished part, is an illustration of the results of continued efficient research for it represents a comparatively cheap and easy method of bringing rinderpest under control, and the local preparation of this vaccine in a properly equipped provincial laboratory is now quite feasible. Advance in economy, simplicity and safety are all represented in this effort of research. You will all appreciate how the climatic conditions of India add to the difficulties attendant on serum manufacture and the preservation of the reliability of these delicate products; and how, in consequence, provision of cold storage in the near future at Izatnagar will simplify and cheapen this tax storage problem.

Establishment of Health

The third stage in the sequence which I mentioned was the establishment of health, which means for veterinary purposes, the establishment of animal well-being and of the general conditions which will strengthen the animal's resistance and improve its quality. This animal nutrition building which is before us now represents as it were, the realisation in brick and mortar of the full recognition of this important branch of veterinary science. It is not appropriate for me to dilate here on the vital importance of scientific nutrition. The interest in this question is now wide and general, and you are all aware of the necessity of food with effective and balanced nutritive value for the proper functioning of the body. What applies to human beings applies with equal force to animals, and in India possibly with even greater force. The more I travel round India, the more I reflect on the deeper and more intimate problems of her rural economy and the physical well-being of her millions, the more am I confirmed in the importance I attach to raising the quality of her cattle and animal population. To the great mass of the inhabitants good animals mean better and more profitable farming and more nourishing food. This important—indeed this fundamental—position which animals occupy in India's economy demands that no effort should be spared to see that the resources of science and technical skill are devoted to examining the improvement of animal nutrition and that the resultant knowledge on this subject is made available both to Governments and, in popular form, to the farming community at large. This animal nutrition branch of the Imperial Institute of Veterinary Research will supply a most important need, and on behalf of all present here to-day I wish it all success.

The other new building which I have been invited to open represents a direct attempt to cope with a large, but till recently curiously neglected, side of Indian agricultural and connected activities. It is destined, I feel confident, to make a most valuable contribution towards the solution of those problems that to-day beset the poultry-keeper in India. The part played by disease as the opponent of quality of production, which I mentioned earlier in regard to animals, applies markedly in the case of poultry in India. So long as disease regularly sweeps off birds in large numbers there can be no sufficient incentive for ordinary owners to go in for quality as against quantity. It is, I believe, the case that nearly all the poultry diseases which have shown themselves in India can readily be controlled; and, if this be so, it is the measure of the opportunity before this Institute, and before those who will place the knowledge which will be acquired within these walls at the disposal of the cultivator and the poultry-keeper.

In comparison with world figures, India's total of domestic fowls and ducks is not so striking as the animal total. Nevertheless the gross figure of domestic fowls in India is estimated at 173,000,000 in birds—a figure from which the dimensions of the problem and the opportunity can at once be realised. A point of great interest is that in this particular departure the Institute is getting to grips at first hand with the commercial problem of the industry. I am convinced that there is great scope in India for the development of the poultry industry. The first requisite for that development is knowledge and it is the object of this Institute to provide it. I have

every confidence that the officer-in-charge, with his staff, will be able at no distant date to render more profitable the business of poultry-keeping in this country.

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PRESERVATION OF THE FAUNA OF THE EMPIRE

The Duke of Gloucester and the Belgian Ambassador spoke in support of the aims and objects of the Society for the Preservation of the Fauna of the Empire at its annual dinner held in the Fellow's Restaurant at the Zoo on June 30th.

The Duke said that from his experience in various parts of Africa he realised to the full the importance of what the Society was doing to prevent the wasteful and indiscriminate slaughter of wild game, and to protect the rarer species. The Society rightly believed that modern progress and the conservation of wild life in all its variety are not imcompatible, and in support of this belief, their efforts to educate public opinion throughout the Empire on questions of animal conservation were of the greatest possible value. But there were, they all knew, tracts of hitherto undisturbed country where civilisation was inevitably and legitimately spreading, and where, as they had pointed out, the only chance that native wild life had of surviving was the establishment of a reserve or sanctuary of some kind in the district concerned.

All were glad to think that it was in the two great Canadian National Parks that their Majesties enjoyed what little rest and recreation they were able to take during their arduous tour from the Atlantic to the Pacific and back. New Zealand had its national parks—notably Tongarino—and so had Australia, but he thought the most famous of them all was undoubtedly what was now known as the Kruger National Park in South Africa, which was established in 1898 as the Sabi Game Reserve. It owed its successful development to the enthusiasm and the devoted services of its Chief Warden, Colonel Stevenson-Hamilton, who had been in charge there for over 36 years, and whose knowledge of wild animals, their habits and their environment, was probably unrivalled. He was glad that Colonel Stevenson-Hamilton had been awarded the medal of this Society, and it was encouraging to hear from him, in a recent address which he gave at Pretoria, that in his opinion there had been an astonishing change in public sentiment towards wild life in recent years, and that to-day he sees, everywhere, the camera replacing the rifle more and more. This was very encouraging, coming as it did from one of his long experience and one who in the past thought the day might be approaching when all wild life in South Africa would disappear for ever.

The Society was fortunate in having the Belgian Ambassador as one of its members, for Belgium's record in establishing national parks was one of which she might well be proud.

The Belgian Ambassador, replying to the toast of "The Society," expressed the hope that should the Duke of Gloucester visit Africa again he would pass through the Belgian Congo and see some of the national parks. Neither barriers nor boundaries of nationality separated those who had the same scientific aims—that of the preservation of the fauna and flora, and, in fact, of all the amenities of Nature.

He recalled the achievements of Belgium in the Congo in the field of scientific research and conservation; and spoke of the friendly contacts between foreign but neighbouring authorities. They hoped that further useful contacts with the authorities of the Anglo-Egyptian Sudan would take place in the near future in connection with the organisation of the "Parc National de la Garamba," whose nothern and eastern borders adjoin the Anglo-Egyptian Sudan for more than 60 miles.

They would be interested to hear that the Belgian colonial authorities, after waging a successful war against sleeping sickness, had decided to launch within their borders a big offensive against leprosy, which for centuries had laid waste so many homes the world over.

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Professor Geo. F. Boddie wishes to thank the member of the veterinary profession who forwarded to him a parcel of poisonous plants, but whom he is unable to thank personally, as the parcel bore no indication of the place of despatch.

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LEGAL NOTES

Foot-and-Mouth Disease Orders Offences.—At Keighley, Yorks, on June 28th, William Gill, farmer, The Homestead, Morton, Keighley, was summoned on three counts under the Foot-and-Mouth Disease Order, 1928, and the Foot-and-Mouth Disease (Boiling of Animals' Foodstuffs) Order, 1932, for failing to report foot-and-mouth disease with all practicable speed, for failing to cause swill to be boiled before being fed to animals; and for allowing animals to come into contact with bones before being boiled.

On the first count he was fined £20, and on each of the other two counts he was fined £10. He was also ordered to pay costs amounting to £6 2s. 3d., the Chairman, saying "The Bench takes a very serious view of this case."

Gill, who was represented by Mr. H. E. Scott, pleaded not guilty.

Superintendent Atkinson, who prosecuted, said 15 outbreaks of foot-and-mouth disease had been traced as occurring through animals which had been in contact with animals owned by Gill, and in those outbreaks 1,126 animals had been affected.

Gill occupied one or two farms in the Morton district. On June 6th he asked Mr. H. M. Holland, veterinary surgeon, of Keighley, to look at his cattle, which, he said, had "fallen off their milk and were stiff." Mr. Holland found typical signs of foot-and-mouth disease, and informed the Divisional Inspector of the Ministry of Agriculture.

Mr. John M. McKellar, a Ministry inspector, visited the premises, and on examining eleven cows, one bull, four calves, two sheep and a pig at the Homestead, found all the cattle were affected. In some of the cattle the lesions were four days old. The sheep were unaffected, but the pig showed lesions of foot-and-mouth disease from 10 to 14 days old. Two cows and a heifer in a paddock adjoining the Homestead showed typical symptoms and the lesions were from 24 hours to four days old. Twenty-two cattle and approximately 90 sheep were examined on the home farm land and 20 of the animals showed marked symptoms, the lesions being from 24 hours to five days old. Of eleven cattle and one sheep on the Carr House land, one cow showed typical symptoms, the lesions being two or three days old.

Dealing with the question of the swill, the superintendent alleged that pigs on Paradise Farm had been fed with swill—collected from Bingley Training College—before being boiled. The superintendent added that the pig on Homestead Farm which had lesions from 10 to 14 days old had previously been on Paradise Farm, where, on June 7th, Mr. McKellar found the pigsties and farm premises littered with bones, the bones being actually strewn about in the sties in which the pigs were penned.

The pig—on defendant's own admission—after being in contact with those bones, was moved to the Homestead, where the first outbreak was notified, and it was possible that the infection was conveyed through those bones.

To the Bench, Mr. Scott said that when Gill rang up Mr. Holland he had no idea that any animals on his premises were affected with foot-and-mouth disease. He had never known the disease before.

Concerning the swill, Gill had given instructions to his man and to the boy that the pigs should be fed with only the cooked part of the food. The uncooked bones were taken for the dogs. Speaking of the third summons, Mr. Scott said the bones found were cooked bones which had been boiled at the Training College.

Superintendent Atkinson said Gill had been before the Court previously in connection with diseases of animals. In March, 1927, for failing to report sheep scab he was fined £2, with £1 11s. 6d. costs; in June, 1932, for failing to give notice of a cow suffering from tuberculosis he was fined seven guineas with £3 10s. costs, and in February, 1934, for failing to keep a register of the movement of animals he was fined £1. In addition he had twice been fined £10 for cruelty to horses.

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Fighting Tom Cats.—When William Escombe, 60, Doctor of Medicine, was fined £7 7s. with £5 19s. costs at Grimsby for cruelty to a cat by beating it with a stick, he said that two tom cats were fighting in his garden, and unless fighting tom cats were separated they would fight to the death, so he separated them with a stick. Escombe gave notice of appeal.

The owner of the cat, Dorothy Watts, a neighbour, said the animal seemed to be in agony after the beating. After reporting the circumstances to an inspector she had it destroyed.

Mr. W. S. Cartwright, a veterinary surgeon, described the cat's injuries and said he had never heard the theory about tom cats fighting to the death.

A witness, who said that she and her husband had lived with Escombe for eight years, declared that she had never seen him treat animals unkindly.

. . . . .

"*Cruelty to Insects.*"—The Brussels correspondent of *The Times* reports that proceedings were taken against a Brussels street vendor on the ground of cruelty to insects. The hawker, a woman, sold bottles of powder for the destruction of parasites. As part of her stock-in-trade she exhibited to the crowd of potential customers a bottle containing insects fluttering about in a dying condition. A passer-by, however, declared that it was horrible to make insects suffer in that way, and fetched a police officer, who conducted all concerned to the nearest police station. There the officer on duty could do no other than make out the charge-sheet on the allegations presented to him.

"The bench are unanimous that this case should be dismissed, but it was quite rightly brought in order to give publicity to the need for farmers to report cases of suspected tuberculosis," said the chairman at Winchester Court, when George Thomas Eatwell, of Upper Standon Farm, Standon, Hursley, was summoned for failing to report a roan Shorthorn cow suffering from tuberculosis.

. . . . .

A defence that the milk he sold was "straight from the cow" succeeded at Spalding, Lincs., when a Cowbit, Lincs., farmer was summoned for selling milk adulterated with 13 per cent. extraneous water and deficient in milk fat to the extent of 13 per cent.

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COWPOX VIRUS

The Lancet, in a recently published annotation, states that the exact relationship between the viruses of cowpox and vaccinia has long been in doubt, and proceeds: "Some authorities, among them Gins, have held that these two viruses are the same, and that cowpox is not a disease *sui generis* but an infection of human origin with either smallpox or vaccinia virus. It is true that some outbreaks of cowpox might be explained in this way, but in many there has been no apparent association with cases of smallpox or recently vaccinated people, and it is this discrepancy that has been largely responsible for the alternative hypothesis that cowpox is a natural disease of cows due to a specific virus, the evidence for which was set out by Ledingham[1] in 1935.

"It might be thought surprising that this question should have remained so long unsettled, but the viruses of the animal pock diseases are a closely related group which cross-protect often to a high degree, and it is only by detailed study, more particularly with regard to antigenic composition, that the specific differences are made clear. Recent work by Downie[2,3] has, however, given us the long-awaited answer. He has made a comparative study of three strains of vaccinia and three of cowpox virus, one of which was isolated from lesions on the hands of a cowman on a farm in Sussex during an outbreak which was described by Davies, Janes and Downie[4] last year. Downie first of all studied the histology of cowpox and vaccinial lesions produced experimentally in the rabbit and guinea-pig and on the chorio-allantoic membrane of the developing hen's egg. He observed definite differences between the two. The cowpox virus produced much less necrosis of cells, and the inclusions it gave rise to were homogeneous acidophil bodies closely resembling those of ectromelia and quite unlike the ill-defined inclusions of vaccinia virus, which appeared to be largely lacking in acidophilic inclusion material. Further, the cowpox lesions were haemorrhagic whereas those produced by vaccinia were not. The difference was fully confirmed when the viruses were examined serologically. Antisera made in the rabbit gave a considerable degree of cross-neutralisation, though the neutralising titre was always higher with the homologous virus. But by cross-absorption experiments Downie was able to

[1]Ledingham, J. C. G., *Proc. R. Soc. Med.* 1935, **29**, 73.
[2]Downie, A. W., *J. Path. Bact.* March. 1939, p. 361.
[3]Downie, *Brit. J. exp. Path.* April, 1939, p. 158.
[4]Davies, J. H. T., Janes, L. R., and Downie, *Lancet*, 1938, **2**, 1534.

show that although the cowpox and vaccinia contained antibodies in common, each possessed antibodies specific for the homologous virus. His conclusion that the viruses of cowpox and vaccinia are closely related but specific viruses seems amply justified. It remains now to determine what relationship exists between the virus of cowpox and smallpox and the status of the virus which Lipschutz has described as paravaccinia virus. Histologically the lesions produced by the so-called paravaccinia virus closely resemble those of the virus of cowpox, and it may be that the 'nodes' described by Danish workers on the hands of milkers and ascribed by them to paravaccinia virus are, in fact, cowpox lesions."

* * * * *

OESTROUS CYCLE IN THE CAT

In *Nature* (May 27th, 1939, page 900) there appeared the following interesting contribution to the correspondence columns, by H. Liche, of the Department of Anatomy, College of Agriculture, Warsaw:—

"The problem of reproduction among cats was studied so far back as 1784 by Spalanzani. Longley,[1] van der Stricht,[2] Hill and Tribe,[3] Courrier and Gros,[4] Greulich,[5] and Foster and Hisaw[6] have made more recent studies of this question, with somewhat contradictory results.

"About 70 cats kept and bred in this Institute have been, during two years, observed and dissected. The results obtained are as follows:—

"The cat is a dioestrual animal, that is, one in which oestrus appears twice a year. The first cycle occurs in the spring, the second one in early autumn. In this respect, together with the other facts (change of habitation, for example), climate has a great influence. It may happen that these two cycles overlap during the summer months, whereas winter is mostly a period of complete rest from sexual activity. More frequent oestrus than twice a year has sometimes been observed by breeders of Angora cats. That is probably connected with advanced domestication. Normally oestrus lasts three to five days. By lack of service it may be prolonged to ten days or more.

"Numerous experiments have proved that ovulation invariably takes place after coitus. That is identical with the rabbit and the ferret. Up to this time, authors differed on this subject. It is interesting to note that a great number of interstitial cells appear in the ovaries of these animals in contrast with other mammals, including women, in which such cells are found either in very small numbers, or not at all. That would be a further confirmation of Ancel's and Bouin's[7] hypothesis, that the interstitial cells are connected with the above-mentioned symptom and have a restraining influence upon it. An extra nervous stimulus as is given by coitus is thus necessary for its accomplishment. Judging by the numerous interstitial cells which can be found in the ovaries of the above-mentioned three species of mammals, the hare and perhaps the mole ought also to be classified among animals with copulative ovulation.

"In the female cat, ovulation occurs about 40 to 54 hours after copulation. Graafian follicles which do not disrupt undergo an atresia; the granulous cells are partly subject to changes; cells of connective tissue grow out of the theca, interstitial cells undergo strong hypertrophy and grow towards the centre. Only a nucleus of connective tissue remains in the centre of the follicle. At first sight, this formation reminds one of the corpus luteum. Differences consist in their way of staining. The follicles undergo a process of atresia in all stages of development, already beginning at the period which precedes sexual maturity. As in the rabbit or ferret, a female cat served by a vasectomised male shows the phenomenon of pseudo-pregnancy, which lasts about 36 days.

"The corpus luteum of pseudo-pregnancy is formed in the first instance of granulosa cells. The blossoming of the corpus luteum takes place after 13 days, and 28 days after copulation it undergoes a reduction simultaneously with the appearance of the growing Graafian follicles of the new cycle.

"During the different phases of the oestrous cycle, considerable changes occur in the genital tract.

"The histological aspect is analogous. During anoestrus, the tube presents a cylindrical epithelium without cilia, whereas on the contrary during oestrus the tube becomes enlarged, it is ciliated and produces a mucus which contains, according to some authors, nourishment for the eggs which traverse the tube after ovulation. Even more prominent changes occur in the uterus. When in anoestrus, we observe a flattened, single-layered epithelium and small inactive glands; during oestrus, on the contrary, the epithelium becomes cylindrical, though deprived of cilia, the glands attain a high degree of development and grow deeply into the endometrium. During pseudo-pregnancy, the development of the glands is still stronger and the endometrium grows out into large folds towards the lumen of the uterus. Lastly, the vagina also shows marked changes during the cycle: the epithelium thickens many times during oestrus, at the same time the superficial layers flatten considerably, become cornified, lose their nuclei and become thrown out of the lumen separately or in flakes.

"Further work is in progress."

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VITAMIN E

"From being the most dubious of the vitamins, vitamin E has emerged into being a well-defined substance," states the *Lancet*. "Its properties are becoming well known and it may soon achieve the distinction of an international standard and unit. On April 22 it was the sole subject of discussion at a whole-day conference held at the London School of Hygiene and Tropical Medicine, and organised by the nutrition panel of the food group of the Society of Chemistry and Industry. The morning session was devoted to the chemistry of the vitamin and provided probably the most interesting discussion and the most exact information. The chief topic of general interest was the correlation between chemical structure and specificity of biological action. It was made clear that biological action is not confined to one isomer or even to the one substance, but that the tocopherol molecule could be subjected to some degree of substitution without losing all biological activity, though with certain substituents in certain positions this activity is intensified. The out-

[1] *Amer. J. Anat.*, 12 (1911).
[2] *Arch. Biol*, 26 (1911).
[3] *Quart. J. Micro. Sci.*, 68 (1924).
[4] *C.R. Soc. Biol.*, 114 (1933).
[5] *Anat. Rec.*, 58 (1934).
[6] *Anat. Rec.*, 62 (1935).
[7] *C.R. Soc. Biol.*, 58 (1909).

come of studies on this subject, as summarised by the Chairman, Professor A. R. Todd, seems to be that as in some of the sex hormones there is a narrow specificity but a possibility of action by a wide group of unrelated substances. At the afternoon session most of the communications turned on whether or not vitamin E is related to the hormones. No overwhelmingly convincing evidence was adduced, for or against a relation, nor did the protagonists on either side succeed in convincing their opponents or the neutral observers. Interesting work from America by Dr. Karl Mason tended to show how small is the transfer of vitamin E from the mother rat to her young, either by way of the placenta or the milk, though some transfer was found to take place in the milk. An excellent film demonstrating the peculiar head and leg movement of young rats deprived of vitamin E was shown by Dr. H. M. Wüest, of Basle. In the evening the clinical applications of vitamin E in human beings were under discussion. All the clinical work in which vitamin E has been used in treatment of habitual and threatened abortion is based on belief in a close relation between vitamin E and the sex hormones. A number of clinicians have recorded successful results, usually in 70 or 80 per cent. of the women treated for one or other of these conditions, and encouraging reports were presented to the meeting from Dr. Vogt-Möller, of Copenhagen, Dr. E. V. Shute, of Toronto, Mr. D. W. Currie, of Leeds, and Dr. C. R. Macdonald, of Sheffield. It is recognised, however, that the assessment of such clinical results is full of pitfalls. It is difficult to obtain accurate and reliable case-histories of habitual abortion, or to define threatened abortion. Moreover, to obtain reliable figures very large numbers of cases are needed for study, with an equal number of comparable untreated controls. In his summing-up, Professor F. J. Browne, who presided at this third session, was at particular pains to emphasise these points.

"Those who remained at the conference throughout the day, as most did, must have left with the feeling that they had surveyed the field in excellent company, and carried away a well-balanced idea of the subject."

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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THE R.C.V.S. AND THE RECOMMENDATIONS OF THE LOVEDAY REPORT

To the Editor of the Veterinary Record

Sir,—I gather from their address (*Veterinary Record*. 1939. **51**. 763) that some of my colleagues on the Council, N.V.M.A. desire the R.C.V.S. to accept the main recommendations of the Loveday Report. I gratefully acknowledge my colleagues' intense desire that *all* future graduates R.C.V.S. shall be equipped with the "University status," but I regretfully differ from them in counting upon the recommendations of the Loveday Committee to confer this inestimable benefit upon us.

The Loveday Committee clearly affirmed its faith in the University system and ideals of education, and in particular it paid its tribute to Liverpool and Cambridge where the system is in practice.

Secondly the Committee made a scathing indictment of the privately governed veterinary schools (Royal Veterinary College, the "Dick" and Glasgow) defining them as "professional seminaries" where "the students pursue their studies in a confined atmosphere, without continuous and intimate contact with students who have other interests and aims." Further on, in paragraph 25, the Committee found that the teachers of these three seminaries "are scarcely less isolated" than their students. "The too frequent absence of a spirit of research in the schools is partly due to penury, but it is also due to lack of the stimulus of that daily communication with workers in allied sciences which in Universities quickens the search for knowledge."

These are two profoundly important contributions; by them the Committee as a result of its labours has recorded its approval of the University system of veterinary education and its condemnation of the education of the privately governed schools. But what has the Committee done next? It has proceeded through page after page of recommendations to strengthen and perpetuate the privately governed seminaries. This is a remarkable somersault on the part of a committee reporting to a Minister of State.

I am bewildered. I cannot see how the future student, for example, of the reconditioned Royal Veterinary College, can enjoy membership of London University if the Committee's recommendations are implemented. What is the use of pretending that he will be a University man? He will have experienced nothing of the internal life of the University; his outlook, his culture, his associations will be those of his veterinary seminary. By the very nature of the circumstances admission to an *external* degree of the University of London does not carry with it the hall mark of a University culture. What is the use of pretending that the teachers of the Royal Veterinary College will enjoy the status and recognition of the University staff? They may receive from their Governors the title and appropriate pay of their posts and the uninitiated part of the public may think they are University professors, readers and lecturers. But the Universities of this country do not confer their privileges and distinctions upon teachers whom they do not appoint, and in whose schools they have no financial interest.

The Loveday Committee has tried to do a strong thing with a weak hand; it has compromised on a fundamental principle of enlightened education. My colleagues who regard the Loveday Report as conferring a "University status" on the profession of the future are deluding themselves. There is one way, and only one way of attaining that object. That one way involves, what the Loveday Committee did not recommend, *viz.*, the complete incorporation of the privately governed veterinary schools within the Universities.

Since the Loveday Committee has not given it to us, how can we get it? Possibly our own R.C.V.S. may have the wisdom and courage to claim this essential foundation for the building up of an enlightened system of veterinary education. Let us look into the position.

The R.C.V.S. has been invited by the Loveday Committee (paragraph 29) to surrender certain duties and privileges conferred by His Majesty's Privy Council, Charter and By-laws. I support the upholding of the independence and integrity Privy Council, Charter and Bye-laws. I support incorporation of the veterinary seminaries within the Universities, and I am entitled to question the justice and equity of calling upon the R.C.V.S. to surrender some of its position, when the governing bodies of the condemned seminaries are called upon to surrender nothing of their position.

It is my earnest hope that the R.C.V.S. will not entertain any surrender of its position unless and until it is announced that the application of the privately governed veterinary schools to be completely incorporated within the Universities has been accepted. That, to my mind, is a reasonable *quid pro quo* in order to ensure the "University status" for *all* graduates into our profession.

I appreciate that the governors of the Royal Veterinary College, under the recent Charter, have the power to seek admission as a school or faculty of the University of London. Very well then, let the Royal Veterinary College show us that its application for admission into the University of London has been accepted before we invite the R.C.V.S. to start negotiations. If the R.C.V.S. surrenders its position before obtaining the *quid pro quo* we shall be worse off than at present.

May I be excused for presuming to advise the R.C.V.S. to proclaim at least the following as its essential terms: (1) The complete incorporation of the privately governed veterinary schools within Universities; (2) the Universities, on incorporating the private schools, to confirm the veterinary teachers in their existing posts and to appoint only Ms.R.C.V.S. to their veterinary posts (*viz.*, Anatomy, Animal Husbandry, Pathology, Medicine, Surgery).

I have the honour to be, Sir,
Your obedient Servant,
TOM HARE.

The Veterinary Research Laboratories,
London, N.W.3.
June 30th, 1939.

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THE COUNCIL, R.C.V.S. AND THE CAMBRIDGE UNIVERSITY

To the Editor of the Veterinary Record

Sir,—Since writing my last letter which appeared in the *Veterinary Record* of June 10th, I have become acquainted with two reports on veterinary education, one the Report of the Departmental Committee on the Reconstruction of the Royal Veterinary College, presided over by Sir Charles Martin, and the other the Report of the Committee on Veterinary Education in Great Britain, presided over by Dr. Loveday. The Martin Report, which is now actually in operation, stipulated that there should be a number of distinct veterinary departments, and that each department should be under a professor, and that the stipend of the professor should be a minimum of £1,000 a year. This placed the professor in this respect on a plane of equality with a professor in the University of London. Surely anyone who knows anything about education will appreciate the importance of this, and will recognise the difference between the meaning placed upon Veterinary Physiology, Veterinary Anatomy and Animal Husbandry at Cambridge and that placed upon the subjects in the Royal Veterinary College when giving effect to the report of the Sir Charles Martin Committee.

Yours faithfully,
EDWARD MORGAN.

"De Lejos,"
23, Crest Road,
Hayes, Kent.
June 21st, 1939.

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R.C.V.S. COUNCIL ELECTIONS, 1939

To the Editor of the Veterinary Record

Sir,—The letter to these columns of June 17th from a former colleague on the Council, R.C.V.S. in my opinion raises two points, one of which may be regarded as a lesson, and the second as a warning.

In the first instance, it should not be necessary for the Principals of the affiliated colleges, whilst holding office, to seek election to our Council in the same way as the ordinary candidate. They should whilst holding office, and in virtue of it, become, automatically, members of it.

In the second instance, the results show that, even if the majority of the electorate do not avail themselves of the privilege of voting, and that those of us who are elected are so elected by a minority of the profession, those who availed themselves of their vote in this last election have declared, in no uncertain voice, their disapproval of the decisions taken in matters which affect the profession not only now but in the future.

There are parts of the Loveday Report which do not appear at first to be clear or exactly palatable: but these should not prove incapable of solution, or adjustment, if petty differences are sunk and the right men selected to study them.

I am satisfied that we possess such men, but I am not satisfied that use is made of their services. Men selected to serve on committees should be selected by the experience they have for the questions which such committees will have to solve—not for their probable opinions. Unfortunately the trend appears to be, that if any man is apt to be unduly critical, or is likely to express disapproval, care is taken to exclude him, and to relegate him to a committee, about whose work he knows very little, and in which he has no interest, but where he will effectively be silenced. This is not the right attitude. A critic or opponent will not be converted in this way. He will become still more hostile. If he is taken in, and his points of view studied, then he may prove a valuable ally. Further, what earthly good is a committee if its future policy is all cut and dried beforehand?

Co-operation has been urged in these columns with a body, until late, in acute opposition to our profession. I have yet to see closer co-operation urged between the National V.M.A. and the Council of the R.C.V.S., although there are signs that this will be done in the near future. In short, co-operation should start "at home," but neither party must conclude "secret negotiations" and then turn to the other for its opinion. If it does, it can only expect and, I submit, merit, a criticism.

Yours faithfully,
J. F. D. TUTT.

"Rothiemurchus,"
St. Cross,
Winchester.